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THESIS

NAVAL LEADERSHIP: A STUDY OF VIEWS ON LEADERSHIP COMPETENCIES AND METHODS TO REINFORCE LEADERSHIP SKILLS

by

Raymond J. Lewis

December, 1990

Thesis Advisor: Alice M. Crawford

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The purpose of this thesis is to examine the perception of the leadership competencies that are being taught at the Navy's leadership course, NAVLEAD, and to investigate ways to reinforce leadership training in the operational environment. An analysis was conducted to identify the importance of the leadership competencies at a naval officer's current job. By determining the importance officers place on the leadership competencies, support can be made to determine if additional training would be beneficial. An investigation was conducted of the various media for leadership training to determine the best method for training in the operational environment. Additionally, an analysis was conducted across designator community and rank, to determine the percentage of time officers spend engaged in management, technical, and leadership tasks. This thesis provides support for implementing post-schoolhouse refresher training through computer-based instruction.

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Naval Leadership: A Study of Views on
Leadership Competencies and Methods to
Reinforce Leadership Skills

by

Raymond J. Lewis
Lieutenant, United States Navy
B.S., Rutgers University, 1983

Submitted in partial fulfillment
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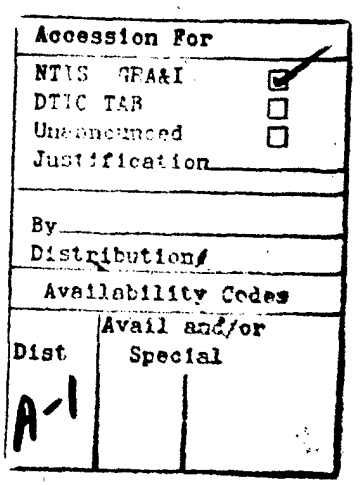
ABSTRACT

The purpose of this thesis is to examine the perception of the leadership competencies that are being taught at the Navy's leadership course, NAVLEAD, and to investigate ways to reinforce leadership training in the operational environment. An analysis was conducted to identify the importance of the leadership competencies at a naval officer's current job By determining the importance officers place on the leadership competencies, support can be made to determine if additional training would be beneficial. An investigation was conducted of the various media for leadership training to determine the best method for training in the operational environment. Additionally, an analysis was conducted across designator community and rank, to determine the percentage of time officers spend engaged in management, technical, and leadership tasks. This thesis provides support for implementing post-schoolhouse refresher leadership training through computer-based instruction.



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I. INTRODUCTION

> Leadership is the soul of the Navy. I consider true leadership - inspired and dedicated - to be the greatest single asset we have in the Navy today, and the sometimes discouraging lack of it to be our most important probiem.
>
> Leadership more than anything else, governs the success or failure of all our individual and collective efforts. All accomplishment begins in and flows through and from its channels. [Ref. 1:p. 106]

A naval officer's ability to lead has long been recognized as the cornerstone of the Navy's ability to accomplish the mission of maritime superiority. The officer's reputation with superiors, peers, and subordinates alike, stems from the officer's ability to lead and accomplish the mission of the command. John Paul Jones, the "father" of the Navy, once wrote:

> "He [a leader] should be the soul of tact, patience, justice, firmness and clarity. No meritorious act of a subordinate should escape his attention or be left to pass without reward, even if the reward is only a small word of approval. Conversely, he should not be blind to a single fault in any subordinate, though at the same time he should be quick and unfailing to distinguish error from malice, thoughtlessness from incompetency and well meant shortcomings from heedless or stupid blunder." [Ref. 2:p. 7]

Such insight is often forgotten in the day-to-day activities, deadlined business, and last minute taskings of naval officers. If increased emphasis is placed on leadership training, both in the schoolhouse and at the command, perhaps

John Paul Jones' words would become a reality and not just pretty words to hang on a wall.

In 1979, the Navy instituted Leadership Management Education and Training (LMET) for commissioned officers and senior non-commissioned officers (E-5 and above). The course of instruction was an attempt to overcome the many problems the Navy was experiencing. Representative F. V. Hicks in his testimony to Congress from the special subcommittee on disciplinary problems in the United States Navy of the Committee on Armed Services, stated these problems -- racism, sexism, drug and alcohol abuse -- were a result of the poor leadership ability in Navy middle management [Ref. 3].

Prior to LMET, little leadership training existed. Commander Dana French, of the Bureau of Personnel investigated the Navy's training efforts. Commander French found two interesting facts. First, the Navy did not provide leadership training to commissioned or non-commissioned officers at key career points; Division Officer, Department Head, Prospective Executive Officer/Commanding Officer for officers and Petty Officer, Chief Petty Officer and Master Chief Petty Officer for non-commissioned officers. Second, that even when leadership training existed, the length of the training was short -- for example, four hours in a two-month school [Ref. 3].

As a result of Commander French's study, the Navy tasked a contractor, McBer and Co., to conduct research in improving the quality of naval leadership and management [Ref. 4]. The result was a two week course of instruction called LMET. The LMET course centers around the instruction of 16 leadership competencies (Appendix A) which McBer and Co. found existed in all superior leaders [Ref. 4].

With the leadership course in place, the task of naval officers is to utilize the training received. The "watch me and you'll see how to do it" style of leadership training that many of the senior officers of the past believed in, does not permit newly trained officers to experiment with the information learned in the schoolhouse. Research in skill retention has shown that over time, non-usage of skills diminishes the level of expertise [Ref. 5]. If reinforcement techniques for leadership competencies are placed at operational commands, officers can maintain the level of skill knowledge required to experiment with new leadership styles.

A. PURPOSE

The purpose of this thesis is to examine officer views on the leadership competencies that are taught at LMET. The analysis focuses on eight leadership characteristics:

- Positive and Realistic Expectations
- Takes Initiative
- Team Builds
- Conceptualizes
- Develops Subordinates
- Influence
- Responsibility
- Persistence.

The perception of the importance of these leadership characteristics is examined in individuals from the following communities:

- General Unrestricted Line
- Surface Warfare
- Aviation
- Submarine Warfare
- Special Warfare
- Engineering Duty Officers
- Medical Corps
- Supply Corps
- Staff Corps
- Warrant Officers
- Limited Duty Officers.

Officer's perceptions of the competencies are further examined across rank.

This thesis also discusses methods for reinforcing leadership competencies in the operational environment, thereby preventing the leadership learning process from ceasing once the LMET[1] course is completed.

B. RESEARCH QUESTIONS

The first question this thesis answers is, what is the perceived importance of leadership competencies that are being taught at NAVLEAD in the different warfare communities? It is assumed that the importance of each of the leadership competencies is perceived similarly in each of the warfare communities; also that different missions -- from ship

[1] In May 1990 the name of LMET changed to NAVLEAD. The new course teaches the same material, however in a different order.

navigating to operating a supply center -- require the same leadership principles.

The second question this thesis answers is, how does the perceived importance of the leadership competencies that are being taught change as rank increases? It is postulated that as rank increases, the perceived importance of leadership competencies increases. The leadership competencies formulated for the initial instruction of LMET were developed based on characteristics of superior performers. As length of service increases, poor performers should be selected out of the service leaving the superior performers as the remaining group to whom the competencies of NAVLEAD are familiar, and who are most likely to utilize these competencies at work.

The third question this thesis answers is, what percentage of time do officers spend daily on management activities, technical activities, and leadership activities? The question is examined across the 11 different warfare communities as well as across rank.

The last question this thesis addresses is, what is the most effective way to reinforce the leadership competencies once the officer is out of the schoolhouse?

II. BACKGROUND AND LITERATURE REVIEW

> Leadership lights the way. Ignore it and your limit is the work of your own two hands. Learn it, and your limit is the world and the sky above it. [Ref. 6:p. 195]

A. HISTORY OF NAVY LEADERSHIP TRAINING

Leadership training has traditionally been part of the initial instruction that a member of the Navy receives. During the 1950's, the leadership abilities of naval personnel were scrutinized as a result of a survey of 10,000 sailors. Two thirds of the sailors questioned reflected that their officers and petty officers were not concerned about the sailor's morale or well being. At the time of the survey, the brig population was the size of the submarine force of the Navy at that time, and it was believed that 70 percent of the prisoners of war in Korea passed information to their captors [Ref. 6].

Prior to this point, the traditional view of leadership training was all that existed; the "watch me and you will learn" mentality had persisted from the founding of the Navy. In the beginning of the Navy's development, young boys of age seven were signed on as a Commanding Officer's steward. Serving as a cabin boy, the young man would learn about the Navy, shiphandling, management, and leadership from the commanding officer and the wardroom of men assigned. Often a young boy would only experience one ship with one commanding

officer prior to his entry as a midshipmen and subsequent commissioning as an officer [Ref. 7].

Modeled after the Royal Navy, the training of seven year old boys was primitive yet thorough enough to produce such great naval leaders as John Paul Jones, Nathaniel Bodwitch, and David Farragut. The many years of learning compensated for the naphazardness of the training. The common thought was that if this method was good enough for the great leaders, it was good enough for their followers [Ref. 7].

In 1845, the United States Naval Academy was established in Annapolis, Maryland. This new school was a mixture of academia and the old apprenticeship program. The first and fifth years were spent in the classroom with the middle three years at sea. Today, with a four year program all devoted to classroom instruction, and only the summer months at sea, the Naval Academy attempts to teach leadership in the classroom and also by promoting a select group of individuals as class leaders. The rest of the students try to emulate the chosen in academic and professional performance.

In 1958, the Secretary of the Navy took an active role to increase the leadership training of naval officers by issuing General Order 21. This order directed all commanding officers to integrate leadership training with the technical training of their crews. Although well intended, this directive failed, because no further guidance was provided. What was produced, was the sea story rhetoric, which was passed along

and often filled with twisted facts from days gone by [Ref. 7]. When it became obvious that there was insufficient command participation, the Navy reissued the General Order. This directive was not worth the time spent producing the paperwork, as once again all efforts to get a collective training program establish failed [Ref. 7].

In 1966, leadership training requirements were phased out of command training plans and were being incorporated into General Military Training. A ten hour leadership training package was developed complete with all necessary training materials [Ref. 7]. This effort also failed because overworked junior officers were often tasked as leadership instructors, and were often incapable of performing the training task properly. Researchers felt that the Navy leadership training program fell victim to its own frills, and was downgraded by the Navy institutionalists, because it was a Secretariat's intervention without sufficient input from line managers [Ref. 8].

In the late 1960's, the Navy and the military in general began to experience many of the racial and social problems of society. Riots occurred on several ships, retention was at one of the lowest levels ever, absenteeism was on the rise, and the negative attitude concerning military involvement in Vietnam was infiltrating the armed forces. Additionally, drug and alcohol abuse were increasing and the Navy had suffered several major ship disasters.

The new Chief of Naval Operations, Admiral Elmo R. Zumwalt Jr., quickly attempted to solve the morale problem in the Navy. In 1970, Admiral Zumwalt issued Z-gram 55, establishing a task force to assist him in solving these problems. The task force concluded in part that the Blake and Mouton grid concept was best suited to deal with naval leadership training [Ref. 9]. As a result of the task force findings, Navy Optimum Means of Integrating Men and Mission (N-man book) was written as a leadership training tool for all Navy leaders. The N-man book was criticized as simplistic, idealistic, and rigid.

Attempts to continue developing training programs after the N-man book were halted as the Navy changed philosophically toward a belief there is no one best leadership style, but that in different situations different leadership styles apply and many leadership styles are valid [Ref. 10]. However, the N-man book was not a complete loss. In 1972, a course entitled, "Command Development" was established using the Seven Step Command Development Model from the N-man concept. This ten week course presented the situational leadership style approaches while retaining the idea of task completion through effective personnel management.

In 1973, a new program was developed entitled "Human Resource Management" (HRM). Admiral Zumwalt, in his desire to reach the core of the problem facing the sailor, instituted the HRM program whereby the investigators could go directly to

junior enlisted personnel to question the morale and conditions surrounding the work environment, thus circumventing the standard lines of communication. The philosophy of the program was that this would allow the information gatherers to obtain the true picture of Navy problems [Ref. 10].

Throughout his HRM effort, Admiral Zumwalt himself visited commands to talk with junior personnel in an attempt to discover what was troubling them. As a result, many links in the chain of command were not contacted for questions, yet received direct orders from the Admiral to solve a sailor's morale problem. By-passing the chain of command caused some bitterness towards the Admiral and the new HRM effort. Navy leaders frequently very deeply resented the new program and did not trust the program's worth [Ref. 10].

The HRM program instituted a formal course of instruction to teach leadership theories. The leadership training of the Human Resource Management program was a ten day course of instruction called Leadership Management Training (LMT). The course LMT was designed for enlisted personnel E-6 and above and all commissioned officers from Ensign to Lieutenant Commander. A 1975 study by the Navy Bureau of Personnel found that, like the leadership training programs before it, LMT lacked clear objectives and standardization [Ref. 9].

Upon Admiral Zumwalt's relief, the new Chief of Naval Operations, Admiral James L. Holloway III, reversed the

trends of his predecessor and returned to a more traditional reliance on the chain of command for all matters; circumventing middle managers was not what Admiral Holloway wanted demonstrated in Navy leaders. In one of his first efforts to improve leadership training, in 1974, Admiral Holloway tasked Navy Chaplain Captain Carl A. Auel to study Navy leadership capabilities and requirements.

Captain Auel, in conjunction with Fred E. Fiedler, a known scholar in the field of leadership, examined training commands and found a proliferation of 58 formal leadership courses and 11 correspondence courses as part of technical and indoctrination programs [Ref. 8].

B. LMET

In an attempt to centralize the leadership training establishment that Captain Auel had discovered in disarray, the Navy contacted a civilian firm, McBer and Co. of Boston Massachusetts, headed by Dr. David McClelland, for a new look at the Navy training effort. The Navy tasked McBer and Co. with the following goals:

> To provide a formal and systematic program for professional development of Navy leaders at critical points in their careers, based on research of effective Navy leadership;
>
> To train officers and petty officers in the specific leadership and management skills to perform effectively at their level in the chain of command;
>
> To conduct ongoing evaluation for improving and updating these programs;

> To encourage Navy leaders to take personal responsibility for implementing effective leadership skills, by means of an educational approach that emphasizes individual initiative and accountability for effective performance as a Navy leader. [Ref. 7:p. 31]

To accomplish these goals, McClelland utilized a method that he developed, called the job Competency Assessment Procedure. The procedure consisted of three parts; identification of a criterion sample, behavioral event interviews, and analysis of interview incidents.

The identification of a criterion sample was based on comparing personnel who were rated as superior performers (in the top five percent) to average performers, across departments. The behavioral event interview required the interviewer to obtain from subjects explicit details of actual situations where specific leadership principles were applied by the commissioned officers and non-commissioned officers. Information was gathered on the management decision leading to the incident, who was involved, the motives of the personnel involved, the subordinate's subsequent behavior, and any additional results that occurred. Interview incidents were analyzed to determine the motives, skills, and behaviors that (a) all leaders need to be able to perform adequately on the job, and (b) separated superior performers from average performers.

McBer and Co. obtained 129 naval personnel from the Atlantic and Pacific Fleets in the surface, air, and subsurface communities. McBer requested personnel at the

following stages of their careers: Division Officer; Department Head; Executive Officer and Commanding Officer for officers; and Petty Officer; Leading Petty Officer; Leading Chief Petty Officer and Master Chief Petty Officer of the Command for enlisted personnel. Those nominated personnel where rated by their Commanding Officer as either superior or average performers. The sample that was obtained included 30 superior, and 21 average personnel from the Pacific Fleet, and 38 superior, and 40 average personnel from the Atlantic Fleet.

During the Behavioral Event Interview process, the interviewers did not know the performance level of the interviewee. Extensive information was gathered from all personnel, starting with the group from the Pacific Fleet. Interviews were analyzed by examining the information obtained from behavior patterns, and resulted in 27 competency elements; the 27 competency elements were present more often in the superior performers than in the average performers.

The next step in the McBer research was to gather the same type of information from the Atlantic Fleet. Responses were examined to determine which competency elements were present. A competency element was considered valid if it was present in both the Atlantic and Pacific Fleets. Results from the Atlantic and Pacific Fleets were compared, and 16 common behaviors were considered valid competencies.

The second validation procedure McBer employed was an extensive written test measuring the level of usage of the

original competency elements. For this written test, 1,000 naval officers and enlisted personnel from the major warfare communities, and representing each of the major career points were chosen. Additionally, 61 personnel from the original 1,000 personnel of the written test group were selected for participation in an additional Behavioral Event Interview. All personnel had performance rating sheets completed by their commanding officers, which allowed the identification of superior and average performers and permitted researchers to validate competency usage.

To validate the competency element, the competency variable was correlated with performance [Ref. 4]. From the initial 27 competency elements, 16 again were validated and marked as behaviors that distinguished superior leadership. These 16 competencies (Appendix A) are the basis for the current Navy course of instruction in Leadership Management Education and Training (LMET).

To accomplish the task of teaching the 16 leadership competencies, the Navy has placed the following mission and goal statements on LMET:

> To achieve the Navy's ability to achieve its overall mission by increasing the effectiveness of Navy leadership across all levels of the chain of command;
>
> To assist the Navy in implementing leadership and management policies throughout its NAVLEAD sites, on a Navy wide basis, as set forth by the CNO yearly objectives. [Ref. 11:p. 1.1-1]

To facilitate the learning process, McBer [Ref. 9] grouped the 16 competencies into five categories:

Concern for Efficiency and Effectiveness
1. Sets Goals and performance standards
2. Takes initiative

Management Control
1. Plans and organized
2. Optimizes use of resources
3. Delegates
4. Monitors Results
5. Rewards
6. Disciplines

Skillful Use of Influence
1. Influences
2. Team Builds
3. Develops Subordinates
4. Self Control

Advising and Counseling
1. Positive Expectations
2. Realistic Expectations
3. Understands

Conceptual Thinking
1. Conceptualizes

The LMET course that ensued was and is a ten day learning experience, where the students attend lectures, review case studies, role play, interact in simulation exercises, participate in group discussion, receive feedback, and are assigned homework. The idea behind the various methods of study, is that through study and practice the student will recognize and be able to experiment with different leadership competencies.

In the course design, McBer utilized the six step Competency Acquisition Process to present the leadership material. These steps [Ref. 9] are:

1. Recognition of the Competency. To provide participants with the opportunity to form clear concepts of the desired knowledge, behaviors, skills or thought patterns through recognition of the competency in the specific thoughts and

actions of superior target-job incumbents in actual situations.

2. Understanding the Competency. To provide participants with an understanding of how the competency relates to performance and the types of situations that require competency demonstration.

3. Self-assessment or Instrumented Feedback on the Competency.

a. To provide an opportunity for participants to determine where they stand -- whether they have the competency and to what degree.

b. To provide an opportunity to formalize the discrepancies between the ideal (possession and demonstration of the competency) and the real (where the participant stands now) -- the springboard of self-directed change.

4. Experimentation with Demonstration of the Competency. To provide participants with an opportunity to try new behaviors: This may mean experimenting with ways of thinking and acting that are different from those used previously, or expanding the range of thinking and acting related to the competency.

5. Practice Using the Competency.

a. To provide an opportunity for participants to practice using the competency in a variety of situation and under a variety of conditions.

b. To provide an opportunity to refine and to continue to develop the ways of thinking and acting characteristic of the competency, with continuing self-assessment of performance.

6. Application of the Competency in Job Situations and in the Context of Other Characteristics.

a. To provide participants with an opportunity to integrate the competency with other competencies, thoughts and behaviors in real job situations.

b. To provide for an ongoing plan of goal setting and practice for continued competency development.

Five leadership courses were instituted at the major career points, Commanding Officer, Executive Officer,

Department Head, Division Officer, Leading Chief Petty Officer, and Leading Petty Officer. These courses presented material based on the above approach providing the student with factual leadership information, and through interactive exercises, a look at how different leadership techniques may be applied.

Initial reaction to the LMET course was that graduates were pleased and enjoyed the instruction. The fleet reputation of LMET spread fast; the course was a sound investment [Ref. 10]. A minor modification to the course was made to provide different material to each of the major warfare communities.

C. LMET EVALUATION

One of the first attempts to evaluate the Navy's LMET program was based on interviews with LMET graduates to determine if any behavioral changes occurred after completing the course [Ref. 10]. The interview was conducted similar to the McBer study [Ref. 9] with four additional questions asked concerning LMET. Interviewees described LMET as being an important part of the career training pipeline, and stressed the need for leadership training. Graduates felt it provided valuable information helpful for improving leadership abilities. Additional interviews were conducted with persons who had not attended LMET, and these non-graduate personnel reported feeling somewhat inadequate when placed in leadership positions. They perceived that they had missed valuable skill

training, and that perhaps there were better ways to handle leadership situations that were not known to them. No systematic behavioral changes were found with the graduates of LMET. The study did find a few isolated cases of behavioral change, however the individuals involved were actively pursuing change.

The results of this first evaluation proved interesting because course shortcomings and course benefits were identified. Graduates of LMET were more knowledgeable about leadership styles. Studying the competencies had allowed students to reflect on their own leadership ability as well as that of other personnel at the parent command. A lack of behavioral changes upon LMET completion, and poor student communication skills, were two problems revealed by this research. Additionally, graduates of LMET were not utilizing all of the instructional material available to them. The Student Journal, a log that students are to maintain as a record of leadership weaknesses and strengths, was not even opened by 73 percent of the graduates interviewed. Many of the graduates felt that LMET ended at graduation. Additionally, the new leadership styles were often stifled and old practices were the order of business. This left graduates frustrated in the attempt to change [Ref. 10]. The authors recommended implementation of a program of competency reinforcement at the parent command.

Another study conducted in 1981 questioned the inception of the Navy's leadership program. The author contended that the research into the design of LMET was poor to begin with because the directive to establish the leadership training program in the format used effectively by existing technical training schools (the Interservice Procedures for Instruction Systems Development) was not followed. Specifically, of the 192 LMET training objectives examined, none adequately met the mandated criteria [Ref. 6].

In 1983, LT Patricia G. Foley extended earlier research efforts that focused on the benefits and limitations of LMET, utilizing the methodology established by the LMET designers, McBer and Co. [Ref. 7].

Foley obtained a sample of 70 superior and average performers from the Pacific Fleet in surface, air, and shore units. She used the Behavior Event Interview on both graduates and non-graduates of LMET. The interview investigated which competencies were being employed in an attempt to distinguish between superior and average performers. Additionally, Foley examined information obtained from an LMET conference that was held in October 1982. Foley found that command climate determined an individual's ability to utilize LMET competencies. Also, training, communication flow, and an effective reward system determined an individual's desire/ability to use LMET competencies.

In her results, Foley found little behavioral change occurred after completion of LMET. Foley concluded [Ref. 7] that several factors influence the usage of leadership competencies:

- time constraints
- manning constraints
- leadership example set by superiors
- barriers to communication up and down the chain of command
- attitude toward inspections concerning the need to pass the inspection by taking shortcuts and hiding information
- emphasis on subordinate development
- perceived lack of support from superiors at a command to utilize new leadership styles
- lack of reward system for competency use.

At the time of the Foley study, graduates still expressed a positive attitude toward the LMET course and the usage of the student journal was still minimal and ineffective. She concluded that LMET should continue and "...a program to reinforce LMET competency use would strengthen the credibility of the LMET program....and possibly improve the performance of Navy commands." [Ref. 7]

Another study was designed to examine the relationship between LMET and ship performance effectiveness. The researchers investigated ship's exercise scores, combat readiness ratings, inspection results, and personnel retention rates. Results from 28 surface ships of the Pacific and Atlantic Fleets were obtained and correlated with the percentage of command personnel who attended LMET. The study

found no significant relationship between ship's performance and crew attendance at LMET [Ref. 12].

McBer and Co. also researched Command Effectiveness [Ref. 9]. A task group was formed of personnel selected by fleet commanders to provide measures of performance that superior commands exhibit; six indicators were used:

- Winning the "Battle E"
- Winning "Departmental E"
- Passing major operational readiness inspections or exercises
- Command retention at or above the fleet average
- Strong safety records
- Reputation as outstanding by flag officers in the chain of command.

Information was collected from Commanding Officers, Executive Officers, Department Heads, Command Master Chiefs and a few personnel nominated by the Commanding Officer. Similar to the Behavioral Event Interview, extensive behavioral information was sought as to how and why the unit was effective or ineffective. Group interviews with Division Officers, Chief Petty Officers, and junior enlisted were conducted to obtain information that influenced command effectiveness.

Additional information was collected concerning the usage and knowledge of the leadership competencies and when LMET was last attended. Respondents were also asked to assess their command based on the characteristics of superior commands.

The information gathered led to a revision of the Chief Petty Officer LMET course by providing information on how

effective performance on one job will improve the performance of the command. Also, the Prospective Commanding Officer/Executive Officer course was discontinued and a program called the Command Excellence Seminar was instituted for senior officers. The Command Excellence Seminar presented the data gathered in the McBer study giving senior officers information on how commands are viewed by the personnel assigned.

Throughout the LMET evaluation research, relatively minor importance has been placed on finding the officer's views on the leadership competencies that are taught. The extensive interviews by researchers continue to find the characteristics associated with good leadership. Upon completion of the Navy course, a student completes an evaluation of course content, instructors, etc., yet once the student has returned to the command, no follow up questionnaire determines if the student was able to utilize the classroom information. The present study looks at naval officers in a work environment and examines the importance placed on leadership competencies at the present job.

D. RECENT DEVELOPMENTS IN LEADERSHIP TRAINING

In 1989, the Chief of Naval Operations (OP-152) issued a request to develop a plan for reviewing Navy leadership training. The desire was to obtain a current overview of the needs for Navy leadership training. The task group issued a

Plan of Action that consisted of a nine stage process. These stages [Ref. 13] are:

- Development of a Policy and guidance Instruction on Navy Leadership Development/Training
- Review State-of-the-Art Leadership Developments
- Navy Leader Development Requirements Analysis
- Analysis of Current Navy Leadership Training
- Navy Leadership Training Alternatives Analysis
- Navy Leadership Training Program Organization and Management Plan
- Navy Leadership Training Development Plan
- Navy Leadership Training Program Evaluation Plan
- Navy Leadership Training Program Implementation Plan

In May 1990, the current leadership course guide was issued. The Navy's leadership course is now called "NAVLEAD." The LMET course material has been reorganized in an attempt to better present the information in a sequence beginning with basic theory and ending with intense problem solving [Ref. 11]. This course is presently being reviewed again as Total Quality Leadership (TQL) is implemented in the training pipeline [Ref. 14].

E. TOTAL QUALITY LEADERSHIP

First implemented in the Navy's aviation community, TQL is a set of management practices based on the guidelines developed by W. E. Demming [Ref. 14]. The TQL practice involves integrating management and statistical methods to improve organizational performance. The major concepts of TQL [Ref. 14] are:

- Quality is defined by customers' requirements;
- Top management has direct responsibility for quality improvement;
- Increased quality comes from systemic analysis and improvement of work process;
- Quality improvement is a continuous effort and conducted throughout the organization.

Under the TQL approach, management control will improve an organizations production. An environment of self pride, working as a group, realization that human emotions affect productivity (eliminate boss and peer fear, production targets, and the no mistake rule), and institute a program of continuing education (both on-the-job and academic) enabling all workers to be able to feel they are a reason the organization is in existence. The ability to increase production and obtain a harmonious work environment is a common goal of LMET and TQL training.

By looking at the importance of leadership competencies -- in naval communities and across officer ranks -- this study will show where continued leadership training needs to exist. This thesis will also examine the teaching methods best suited for leadership training.

III. METHODOLOGY

This study examines an officer's perception of leadership competencies that are being taught at NAVLEAD, and investigates the time officers spend in management activities, technical activities, and leadership activities. Data from an officer survey administered by the Naval Occupational Development Analysis Center were analyzed to address these issues across naval communities and rank structure. The analysis is centered around eight leadership competencies in 11 warfare communities from Chief Warrant Officer 2 to Captain. Additionally, analysis of an officer's time was also conducted in each warfare community and across grade. Research was conducted through a review of leadership and education literature to determine effective methods of teaching leadership behaviors in the post schoolhouse environment.

A. OFFICER SURVEY INSTRUMENT

In 1988, the Navy tasked the Naval Occupational Development and Analysis Center (NODAC) to design a questionnaire to collect data from all naval communities. The officer survey was modeled by NODAC after a civilian questionnaire, the Professional Managerial Position Questionnaire (PMPQ) [Ref. 15]. The NODAC survey entitled

"Officer Survey Instrument" (OSI) was divided into four sections:

- Section A: Billet Information
- Section B: Personal and Job Background Information
- Section C: Managerial and Professional Responsibilities
- Section D: Leadership

Section A, Billet Information, is a data section concerning the job, not the person filling the billet. This first section is filled out by the command, and addresses information such as billet designator, billet grade, billet subspecialty code, billet Primary and Secondary Navy Officer Classification codes, and billet Additional Qualification Designation code. The final command question concerns the current status of the unit; ashore state-side, ashore overseas, deployed etc.

Section B, Personal and Job Background Information, obtains demographic data concerning the officer: officer's designator, grade, time in commissioned service, time in current grade, highest educational degree and field, and service school attendance. The survey also gathers information on the number of personnel the officer supervises, the highest grade of subordinate personnel, and grade of the officer's immediate supervisor. The officer's job title, time served in the job, average work week, and time devoted to collateral duties, meetings, and social engagements is also requested.

The third section, Management and Professional Responsibilities, is a series of 33 questions consisting of two parts each. The first part of each question questions the extent to which a managerial task is part of the job; the second part of each question requests the perceived complexity of the managerial task questioned. Managerial topics in this section vary from planning, scheduling and Public Affairs Activities to Watch Standing.

The final part of the survey, Leadership, is a series of questions developed by the Leadership and Command Effectiveness Division of the Naval Military Personnel Command (NMPC-62). The OSI asks the officer to determine the percentage of time spent in three areas: management tasks, technical tasks, and leadership tasks. When summed together the officer's total time spent is to equal 100 percent. The survey defined each activity as: Management Tasks -- Tasks requiring you to plan and organize the use of resources; Technical Tasks -- Tasks requiring you to use equipment or techniques which are specific to a particular science, art, profession or craft; Leadership Tasks -- Tasks requiring you to develop subordinates, arouse commitment in others, or communicate clear standards and expectations.

The survey also questions the officer about the perceived importance on eight of the 16 leadership competencies taught at NAVLEAD for the officer's current job. The eight leadership competencies and definitions provided in the survey

are: Use of Multiple Influence Strategies -- Motivating or persuading others to act, or to accept a policy or position; Sense of Responsibility -- Making difficult decisions and accepting accountability for the consequences; Team Building -- Communicating to others the need for cooperation and teamwork in order to accomplish a task; Developing Subordinates -- Transferring expertise by setting an example, providing information and encouragement to get a task accomplished; making training opportunities, expert help and resources available; Conceptualization -- Grasping and explaining complex or unfamiliar ideas or situations through the use of metaphors and analogies; Initiative -- Going beyond what a situation requires and acting before being tasked; Persistence -- Continuing to work toward completion of goals in spite of opposition of difficulty; Positive and Realistic Expectations -- Assessing subordinates' abilities and equipment status in order to set obtainable performance goals.

B. SURVEY RESPONDENTS

In July 1988, the OSI was approved for release and NODAC mailed the survey to 10,000 naval officers. The survey was sent to personnel in every community in each rank. Personnel who were in training or other transient status were not included in survey respondent selection. In December 1988, six months after the survey was released, NODAC considered the survey closed. A total of 7,381 surveys were collected and

the responses became the OSI data base. This thesis uses data collected in the final part of the survey.

C. PROCEDURES

To extract the useable data, frequency analyses were completed on all data fields to be used in this thesis. All entries without complete data were eliminated. Additionally, if the time spent in management activities, technical activities, and leadership activities did not equal 100 percent, that entry was eliminated. For all statistical work, Staistcal Application System (SAS) version 5.18 at the Naval Postgraduate School was utilized. For this thesis, a data base of 6,768 naval officers was used. Personnel constitute 11 warfare communities across nine grades.

1. Perception of Leadership Competency Importance

To determine the importance officers place on leadership competencies, a frequency analysis was conducted on OSI responses to these items. Each leadership competency was compared to the officer group in aggregate. The results were the basis for which further comparisons were made.

Data were combined by warfare community to obtain a comparison of the importance placed on leadership competencies within each community. Officers in training for warfare qualification were considered part of the warfare community to which that officer aspired to belong. All Material Professional designator officers were assigned to the community from which the original warfare qualification was

attained. Appendix B lists the primary designator of each warfare community and the designators that make up the combined community group. A frequency analysis of leadership competency importance as a function of each warfare community was conducted. This produced the community perceptions of leadership competency importance.

In order to determine the view of officers on the importance of leadership competencies across grade, a frequency analysis was conducted with officers in aggregate. A comparison was done within each of the warfare communities on the perception of leadership competencies across each grade as well.

Response choices to each question concerning the importance placed on leadership competencies ranged from zero, does not apply, to seven, extremely important. Responses were grouped into three categories for analysis. If the response was zero or one, the response was evaluated as not important; if the response was two, three, or four, the response was evaluated as important; if the response was five, six, or seven, the response was evaluated as very important.

2. Time Devoted to Management, Technical, and Leadership Activities

To determine the percentage of daily time officers spend on management activities, technical activities, and leadership activities, a frequency analysis to the relevant OSI responses was conducted. Each activity was compared to

the officer group in aggregate. The results were the basis for which further comparisons were made.

Data were combined by warfare community to obtain a comparison of time spent in management, technical, and leadership activities within each community. Once again, officers in training for warfare qualification were considered part of the warfare community to which they intended to belong. All Material Professional designator officers were assigned to the community from which the original warfare qualification was attained. Appendix B lists the primary designator of each warfare community and the designators that make up the combined community group. A frequency analysis of time devoted to management, technical, and leadership activities by each warfare community was conducted. This produced the community response to each activity.

In order to determine the time devoted to management, technical, and leadership activities across grade, a frequency analysis was conducted with officers in aggregate. A comparison was done within each of the warfare communities on each activity across each grade as well.

3. Reinforcement Methods for Leadership Training

Previous research on the leadership competency information presented at NAVLEAD determined that once the officer left the schoolhouse, little of the leadership information was remembered. Recommendations have been made to implement a post schoolhouse training program. This thesis

investigates ways to reinforce leadership behavior information in an attempt to determine the most effective way to conduct leadership training in the operational environment.

To determine the best method for reinforcing leadership behavior information, a literature review was conducted on the current and experimental teaching methods available. Investigation into the teaching methods was made, concentrating on the practicality of utilizing an instructional method in a time constrained environment, and the benefits received from utilizing the teaching method.

IV. RESULTS

The focus of this thesis is on the decay of the leadership skills taught at NAVLEAD once an officer has returned to the operational environment. Previous studies in this area suggested a need for refresher training in the job setting due to a number of factors [Refs. 5 and 7]. For example, knowledge of leadership competencies may fade due to a lack of command climate support.

One possible explanation that has never been researched is, the compatibility of NAVLEAD competencies with job task requirements as a function of rank and community. It may be, for example, that the knowledge and skills taught at NAVLEAD are not appropriate for all officer ranks or communities. Perhaps some competencies should be trained closer to the time they are actually needed. Before the Navy invests in implementation of refresher training, it is important to answer these questions.

This thesis addresses the issue of how appropriate the NAVLEAD competencies are for officers across rank and communities. First, the OSI provides ratings of the level of importance officers associate with each leadership competency included in the survey. This does not tell how often each competency is used; further research will have to address to the extent to which leadership competencies are being used.

However, the survey data do provide a first look at officer opinions of the need for the leadership competencies. Second, a global measure of time actually spent in leadership (as compared to management and technical activities) is available in the OSI data base.

Analysis of these data provide an indication of the importance of the information trained in NAVLEAD, and an initial basis for determining whether the training is worthwhile. The results of the analysis are presented in this chapter. The OSI data base provided information on only eight of the leadership competencies of NAVLEAD. The assumption was made that the perception placed on these eight, represent the perception of all 16 competencies. Methodologies for delivering leadership (independent of what point in time leadership training is offered, or to whom) are addressed in Chapter V.

A. OFFICER RESPONDENTS

Data from the OSI provides 6768 officer observations for this thesis. Table 1 and Table 2 illustrates the breakdown of officers by warfare community across rank. Each data group provides sufficient observations to complete statistical analysis with the exception of three data fields where caution is exercised in the interpretation of results due to a small number of observations; Captain General Unrestricted Line (3), Ensign Submarine Warfare (3), and Ensign Air Warfare (2).

TABLE 1 POPULATION OF OFFICERS IN COMMUNITIES ACROSS GRADES

DESIG	ENS	LTJG	LT	LCDR	CDR	CAPT
GURL	20	50	124	49	11	3
SURF	31	53	79	36	38	38
SUB	3	42	123	48	34	28
SPEC	7	26	130	68	38	12
AIR	2	80	287	141	119	66
EDO	11	23	197	265	193	89
STAFF	42	98	523	341	235	120
MED	19	52	348	212	105	83
SUP	15	33	85	57	41	20
LDO	109	150	429	222	46	8

SOURCE: Officer Survey Instrument, 1988 (extract)

TABLE 2 POPULATION OF WARRANT OFFICERS ACROSS GRADES

DESIG	CWO2	CWO3	CWO4
CWO	340	238	291

SOURCE: Officer Survey Instrument, 1988 (extract)

B. PERCEPTION OF LEADERSHIP COMPETENCIES

The fourth section of the OSI investigated the perception officers place on the importance of eight of the leadership competencies taught at NAVLEAD. Investigation in this thesis focused on the perceptions that officers have in aggregate, across rank, and across designator community.

1. All Officers

The percentage of officers who view each of the eight leadership competencies as not important, important and very

important is illustrated in Figure 1. The majority of officers view every leadership competency as very important. If the responses of important and very important are combined, every leadership competency would be viewed by over 90 percent

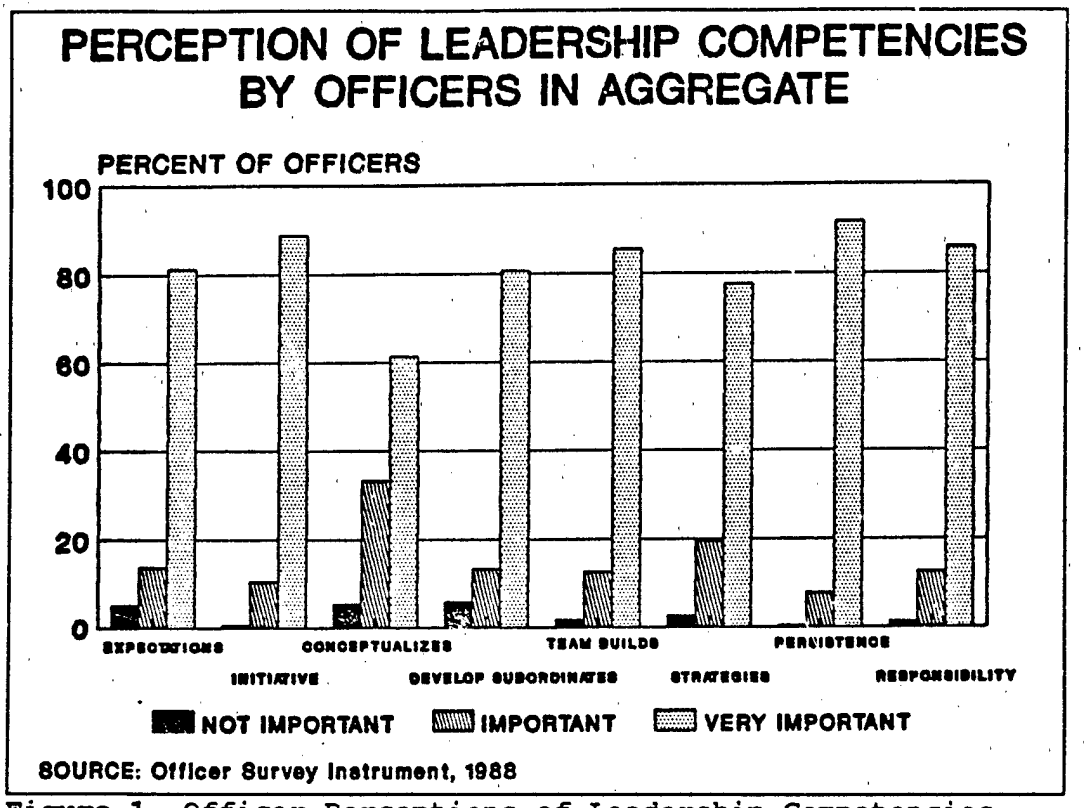

Figure 1 Officer Perceptions of Leadership Competencies

of the officers as important.

Of the eight competencies surveyed, only one competency was not evaluated by over 80 percent of the officers as very important. The leadership competency, conceptualizes, was evaluated by only 63 percent of the officers as very important and 33 percent as important.

2. Across Ranks

The view of officers on the leadership competencies across rank is similar to that of the officers in aggregate. Appendix C lists the tables of numbers for each of the grades and the percentage of officers who view the leadership competencies as not important, important, or very important.

3. Across Communities

The view of officers on the leadership competencies across communities is similar to that of the officers in aggregate. Again, no dramatic differences were seen. Most of the respondents, in all of the communities, viewed the competencies as important to very important. Appendix C lists the tables of numbers for each of the communities and the percentage of officers who view the leadership competencies as not important, important, or very important.

C. TIME SPENT ON MANAGEMENT, TECHNICAL, AND LEADERSHIP ACTIVITIES

1. All Officers

The percentage of time officers spend on management, technical, and leadership activities is illustrated in Figure 2. Management activities occupy the greatest percentage of officers' time, 40.69 percent, while time on technical and leadership activities are roughly equal, 27.26 and 27.29 percent, respectfully.

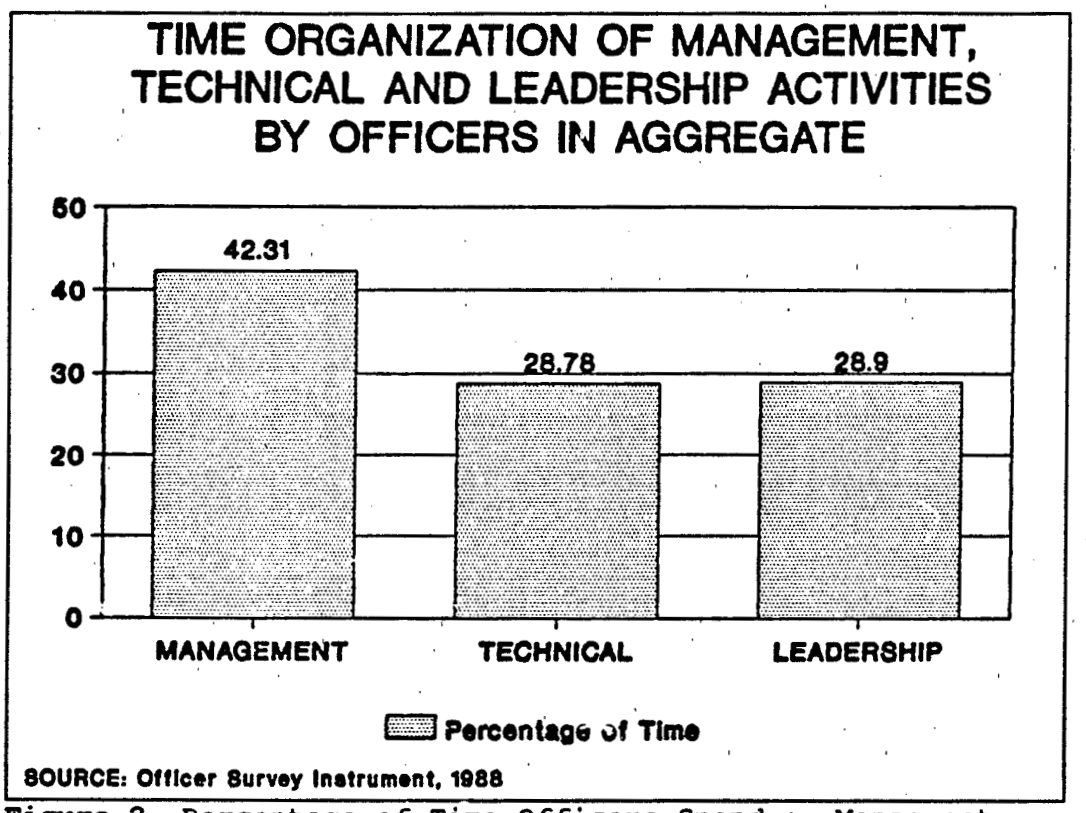

Figure 2 Percentage of Time Officers Spend on Managment, Technical, and Leadership Activities

2. Across Ranks

The percentage of time officers spend on management, technical, and leadership activities in each grade is illustrated by Figure 3. From Ensign to Captain, each grade is approximately equal to the overall mean. Captains exhibit a seven percent decrease in time spent on technical activities and a five percent increase in leadership activities. Lieutenants and Lieutenant Commanders both exhibit a slight (one to two percent) increase in technical activities and corresponding decrease in leadership activities. The time spent on technical activities is highest at the Lieutenant

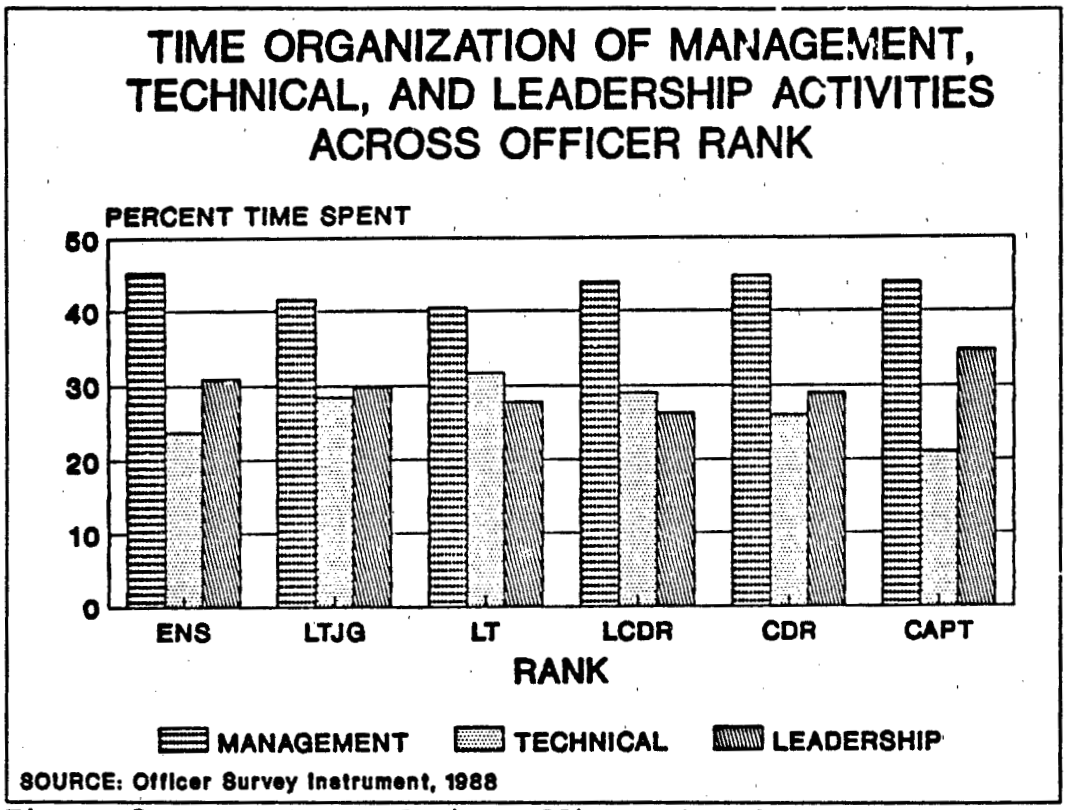

Figure 3 Percentage of Time Officers Spend on Management, Technical, and Leadership Activities (across grade)

Commander level and is lowest at the rank of Captain. Additionally, the time devoted to leadership activities remains fairly constant from Ensign to Commander, and then increases approximately five percent at Captain.

3. **Across Communities**

The time spent on management, technical, and leadership activities by officers in each community is illustrated in Figure 4. The most notable exception to the overall trend is in the medical community. The percentage of time spent on management activities is low (26.52) and time on technical activities is very high (47.65). This is expected,

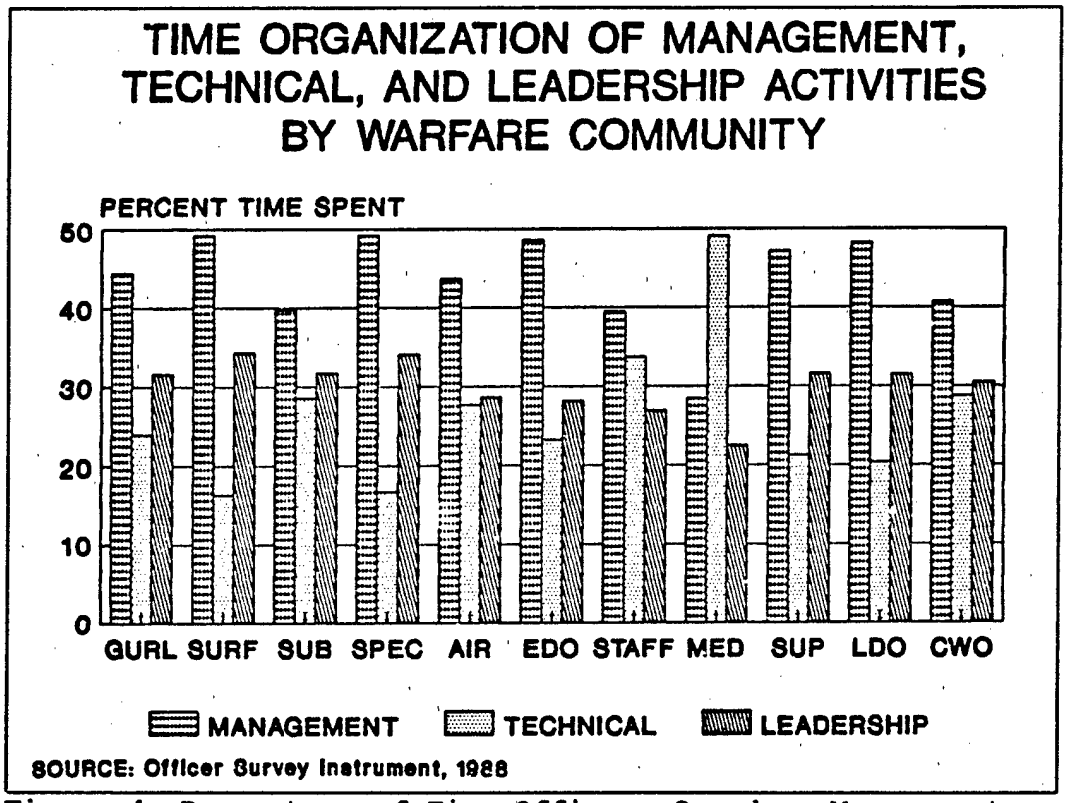

Figure 4 Percentage of Time Officers Spend on Management, Technical, and Leadership Activities (across community)

though, in that doctors and nurses spend more time on patients than other activities.

The Surface Warfare, Special Warfare, Engineering Duty Officer, Supply Corps, and Limited Duty Officer communities show a slightly higher that mean time spent on management activities. In each of these communities, the activity that time is less devoted to, is technical activities. The time spent on leadership activities is also slightly greater in these communities by approximately two percent.

The time spent by officers on management, technical, and leadership activities in each community across rank was similar to the officers aggregated. Appendix D displays the table of percentage of time spent on each activity across rank.

V. REFRESHER LEADERSHIP TRAINING PROGRAMS

A. REINFORCEMENT STRATEGIES FOR LEADERSHIP TRAINING

The desired effects of a leadership training program are to increase leadership skill level knowledge and demonstrate how certain leadership behaviors can motivate a leader's subordinates to carry out the leader's orders. NAVLEAD, The Navy's formal leadership course, accomplishes these goals. Research has shown however, that knowledge from NAVLEAD is not being retained [Refs. 5 and 10]. This chapter will examine different methods of leadership training. These methods -- lecture, case study, abbreviated case study, conference method, and computer based instruction -- will be investigated for effectiveness in refresher leadership training.

1. Lecture

The traditional method where one expert presents information to another person is through a lecture. In this style of teaching, students sit and listen while a person or persons profess their knowledge. Little interaction is possible in a lecture environment. Occasionally, discussions may erupt over a particular topic, however most student participation is through questions, and questions are limited by class size.

While much information can be gained from lectures, critics find two pitfalls in with this instructional method.

First, lectures are a passive learning process. The teacher, an active player, presents information to the passive student. Students, if so motivated, may pay attention and gain useful information. However, students also have the option to tune out and close their mind to the process [Ref. 16]. No penalty exists in the learning process for students who do not listen.

The second criticism of lectures concerns the non-participatory nature of learning. With a lecture, no hands-on practice of leadership skill usage occurs. Students do not confront, in the learning process, any situation where material presented can be practiced. This tends to weaken the value of lectures as a teaching method [Ref. 16].

2. **Case Study**

Case studies originated in law school whereby facts, opinions, and final decisions where presented for analysis. Harvard Business School adapted the process of case study and now centers all business education with this approach [Ref. 16]. The case study method attempts to demonstrate through real-life situations, the knowledge and skills leaders exhibit to be effective.

The case study method of teaching does not present principles or facts from textbooks. Cases are written with the intent of presenting the situation a leader has encountered. Two types of cases exist; the training case and case history. A case history illustrates a historical

perspective of a person, situation, or event, revealing the final outcome. A training case presents a problem. Training cases are written for a challenging analysis where the final decision is kept secret, allowing students to decide the best behavior to invoke [Ref. 16].

Case studies place a large part of the learning process on the student. Students must use their knowledge and intuition to devise a logical and factual approach to making a decision. The process of decision making is the goal of case studies and is what students are expected to practice and improve. Case studies, therefore, train students in developing conceptual diagnoses of human organizational problems. Case studies, do not teach behavioral and motivational skills of leadership. Case studies are most appropriately used to complement another instructional methodology, such as lecture, which presents the requisite skills and knowledge

3. **Abbreviated Case Study**

In an attempt to minimize the preparation required to develop case studies, the abbreviated case study was developed. The abbreviated case study eliminates some of the extensive details of the case study while still providing the essential information to the student. The abbreviated case study is intended to take 15 minutes of preparation for the student [Ref.16]. The facts of the case are presented in a straight forward manner. This simplifies the discussions

concerning the case and allows for a more centralized focus on the case problem.

The advantage to the abbreviated case study is also a disadvantage. The lack of unimportant information prevents students from sifting through superfluous data to find the correct cause of a problem. The oversimplification does not necessarily reflect reality, and does not allow a true analysis or decision making process to occur.

4. Conference Method

The conference method of leadership training is a group process where members of an organization discuss a problem, generally a problem encountered by a member of the group, and attempt to discover the best solution. Two approaches to the conference method have been developed -- the free conference and the directed conference.

The free conference is a discussion with no rules or direction. Students discuss the problem that is posed with no guidance or logical progression from the trainer. Solutions to the problem in discussion, arise randomly and may not be at the end of the discussion. This round-about discussion causes confusion in the group and the group often never comes to a resolve to the problem [Ref. 16].

A directed conference is a trainer guided discussion. The group has a prearranged agenda and discussions flow along a logical path. The trainer may attempt to obtain desired

results through guidance and active participation in the discussion [Ref. 16].

The goal of the conference method is to have students gain new thoughts on leadership problems by listening to many different views. Also, students can learn new ways to handle a leadership role as a result of the group discussion.

The conference method is a popular training method. It does not, according to some, require a subject matter expert as no theories or principles of leadership are presented; only a person who can lead a discussion is required. Problems and solutions arise from the student's experience and knowledge. For a directed conference, a generic agenda or guideline outlining the basic flow of discussion could be written to assist the trainer in leading the discussion [Ref. 16].

A drawback to the conference method is that students do not practice the skills and information learned from group discussion. To overcome this to some extent, the training session can be augmented with role playing activities.

Lack of a discussion leading expert may be detrimental to the group. Trainers may not be skillful enough to question or lead the group to discover the true underlying cause of the problem. Insight may be lost. Trainers therefore should not be chosen randomly but on the basis of skill to lead discussions and the ability to probe and discover information.

5. Computer-based Instruction

In recent years, the development of artificial intelligence and computer hardware has been astonishing. Industry is using artificial intelligence where the simulation of human thinking was believed to be enormously difficult; the space program, manufacturing, the airline industry, and the nuclear power program all heavily rely on the new computer-based technologies [Ref. 17]. The education system has also realized the potential effectiveness of computers for teaching. Computer-based instruction (CBI) permits training where time, space, and resources may otherwise be unavailable [Ref. 17]. Computer-based instruction could also be very useful for delivering refresher leadership training for Navy leadership skills.

Computer-based instruction evaluations have centered around comparisons of computers to lectures. In certain military and civilian educational systems, students performed better (examination scores were raised by .31 of a standard deviation) and completed courses quicker (32 percent) when using computer-based instruction as compared to the traditional lecture approach [Ref. 18, 19, and 20]. Additionally, students enjoyed the instruction more favorably; attitude toward instruction was raised by .28 of a standard deviation when computers were used [Ref. 19]. Researchers at University of Delaware found that after initial implementation of computer-based instruction, university instructors favored

CBI and felt disadvantaged when unable to utilize computers [Ref. 19].

In post-college or adult settings the use of computers has a more pronounced effect. Achievement is highest with the use of computer-based instruction for the adult and college educated [Ref. 18].

At present, the Navy has several computer based instruction systems in place. Steamer, a propulsion system trainer, allows engineering students to practice engineering system procedures on a simulated steam plant where safety constraints are not an issue [Ref.17, and 21]. The maneuvering board trainer has been an outstanding tool for officers and enlisted personnel to learn the difficult concepts of relative motion involved in navigation procedures [Ref. 17].

CBI has also been shown to be useful for training radar operators and electronic warfare personnel in jamming and counter-jamming procedures. The use of dynamic graphic displays to illustrate jamming has been shown to clarify these otherwise confusing situations [Ref. 17]. A further use of CBI in the Navy, is for training pilots. Computers have been able to simulate the rigors of jet flying, enabling pilots to face threats and problems, think of a solution, and react as necessary in an otherwise non-simulatable situation [Ref. 21].

The use of computers to train in management and leadership procedures is not a new idea. Corporations, such

as Holiday Inns, have been using computers to train management personnel for over seven years. The use of CBI has saved time and money, and has been effective in their management training program [Ref. 17].

Another potential advantage for the Navy is that CBI training can be accomplished on an individual basis, allowing more flexibility as to when training can occur and how long it lasts. The traditional all office meeting would not have to be conducted, forcing 20-50 officers to gather at once in the already hectic and task-filled day. Through individualized CBI, each officer could spend that portion of time when they are available, to utilize the computer and receive training.

B. LEARNING PROCESS AND MEDIA SELECTION

The Navy is continuously updating training programs in order to maintain a high level of efficient and effective instruction. To support training needs, the military has a long history of research in instructional techniques [Ref. 22]. Much focus has been given to the media that deliver the content of instruction; attempting to discover the optimal teaching method to satisfy the human learning process.

The learning process is best understood by Gagne, whose theories of learning are often the basis for instructional designers [Ref. 23]. Gagne has shown that it is appropriate to classify the outcomes of learning and the internal and external stimulus conditions by which they will be acquired [Ref. 24]. Gagne proposed eight types of learning determined

by the outcomes of the learning process: signal learning, stimulus response learning, chaining, verbal association, multiple discrimination, concepts, principles, and problem solving [Ref. 25].

In order to choose the proper media for training, five steps should be examined according to Gagne. These are: state the behavioral objectives for the course; for each objective, identify the type of learning involved; using the conditions of learning as a guide, design a media for each objective; prepare a summary of the media selected for the group of objectives; and determine the most appropriate media for the program [Ref. 25].

In 1972, Gagne theorized on the classification of learning outcomes. These outcomes are based on the fact that instruction should be centered on the desired results not the individual learning process; yet must address the internal learning stimuli of the student. The classification of learning outcomes [Ref. 23:p. 16] are:

> Intellectual Skills. These skills include the use of concepts, rules and procedures. This procedure is referred to as procedural knowledge.
>
> Verbal information. This category is also known as declarative information and it refers to the ability of the individual to declare or state something.
>
> Cognitive strategies. This refers to the idea that learners bring to a new task not only intellectual skill and verbal information, but also a knowledge of this information. Cognitive strategies form a type of strategic that enables the learner to know when and how to chose the intellectual skills and verbal information they will use.

Motor skills. This skill refers to one of the examples of human performance.

Attitudes. This is the least tangible of the learning outcomes due to the complexity of identifying attitudes. The learning outcome would be concerned with a willingness to perform according to a standard as opposed to a skill performed to that standard.

Leadership training focuses on the outcome classifications of intellectual skills, verbal information, and attitudes.

In leadership training, intellectual skills lay the groundwork for all other phases of leader behavior modification. The student must gain the knowledge of the leadership competencies, in addition to the other factual information of NAVLEAD. By acquiring the intellectual skills, an increased insight into leadership can be achieved. To demonstrate proficiency with the first phase of leadership training, identification of a leadership problem and the correct underlying causes are in order.

The second phase of leadership training is to demonstrate and apply the knowledge gained. The outcome of verbal information will reaffirm the student, and give confidence to superiors, that proper leadership action is taking place according to factual data. The proper follow on action to a leadership problem is an example of this phase of leadership training.

The final phase of leadership training is attitude. The student must believe in, and have second nature of the leadership knowledge gained from leadership training. Recognition that different situations necessitate different

styles of leadership action, while consistent in military discipline process would confirm the learning process is complete.

To properly choose a media for instruction, a process of selecting stimulus criteria was established by the Office of Naval Education and Training [Ref. 23]. The guidance published, NAVEDTRA 108, equates Gagne's five types of learning outcomes to learning objectives [Ref. 23]. To determine which media is best suited for training to be accomplished, NAVEDTRA 108 provides guidance on the desired outcomes and equates the relevant media through a series of matrices. Once the matrices are completed, it can be established which media are best suited to accomplish the training.

To determine the best leadership medium for delivering a leadership training program, the variables recalling bodies of information, using verbal information, attitude learning, making decision, and rule learning and using were used as the desired outcomes. For a leadership training program in an operational environment, the following results were obtained from the NAVEDTRA 108 matrices:

1. Recalling Bodies of Information
   Computer-Based Instruction
   Teaching Machine
   Audio Visual Instruction with Programmed Texts
   Instructional Television

2. Using Verbal Information
   Computer-Based Instruction
   Teaching Machine

3. Attitude Learning
   Operational Job Setting with Instructor
   Simulated Job Setting with Instructor
   Case Studies

4. Making Decisions
   Computer-Based Instruction
   Simulation Games

5. Rule Learning and Using
   Computer-Based Instruction
   Teaching Machine
   Procedure Trainer
   Simulator

The method of computer-based instruction appears as an appropriate media for instructional delivery in all but one of the learning objective matrices.

The recommendation of this thesis for a post-schoolhouse leadership training program is to develop a computer-based instruction for microcomputers. The portability of such a program, enables the training to be conducted on both ashore and afloat units. Computer-based instruction is presently utilized by the Navy in technical curriculums. The extension of CBI as an instruction media for management will enable the Navy to reap the benefits outlined previously, once again.

The potential for highly sophisticated CBI is increasing as the realm of artificial intelligence expands daily. New developments are continuously being made. Human interaction with the computer has increased so as to allow surgical simulation [Ref. 20]. The bounds of artificial intelligence are presently non-existent and the Navy should not be left behind.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The leadership competencies being taught at the Navy's leadership course were examined in an attempt to identify the perception which officers have of the importance of these leadership competencies for the officer's job. Every competency that was investigated was found to be very important to the majority of officers surveyed, both across designator community, and across rank. At least 90 percent of the officers surveyed felt that each leadership competency was important at the job.

The Navy has shown that leadership training is a necessity. The conditions which the Navy encountered in the early 1970's should not be reexperienced. By training senior petty officers and commissioned officers, the Navy hoped for and improved upon the leadership skills of naval middle management. The present course of instruction, NAVLEAD, is a useful vehicle to present the initial foundation of leadership information. The usage and ability to effectively demonstrate the leadership knowledge gained from the course are dependent on the student.

This thesis presented evidence which has shown that over time, knowledge that is not utilized, is quickly forgotten. There may be a number of different reasons why NAVLEAD

information is not fully utilized, but lack of appropriateness of that information was shown here not to be one of the factors. There may be some difficulties with timing of the initial training but these data affirm the general usefulness of the training.

To help overcome the decay of skill knowledge, a program of skill reinforcement can be implemented at the command level, whereby officers can be refreshed with NAVLEAD information. Using computer-based instruction to deliver refresher training could be beneficial. As an individualized training tool, many work hours would not be lost as they would be in the case of an all officer meeting where 20 to 50 officers gather and discuss a situation in an attempt to discover and solve the leadership problems presented. Also, the impact of many officers away from the job all at once for extended periods can lead to a less productive command. Yet, the alternative of one person at a computer with an interactive program which simulates human action based on the officer's (student's) decisions, is a time efficient, effective, and enjoyable way to accomplish leadership training.

The time officers spend on leadership activities is a disillusion that this thesis uncovered. With the importance placed on leadership to effectively succeed in the military and the important role leadership occupies in productive organizations, naval officers only spend 28.90 percent of a

day's time engaged in leadership activities. Additionally, when investigated across rank, the percentage of time senior officers spend engaged in technical activities is speculated to be extensive (21.14 percent). The information this thesis found is presented to community managers, for investigation into the appropriateness and maintenance of desired levels of officer productivity.

B. RECOMMENDATIONS

The first recommendation would be to investigate the level of initial leadership training that exists. Having found that the material presented is important, is there enough time at the initial training site for demonstration of the factual material?

The timeliness of leadership training plays a significant factor in the learning process. Is it necessary to send an ensign for leadership training directly after the accession training completion, or could training be accomplished at a later time -- such as at the Lieutenant junior grade promotion -- where the officer is seasoned with some field experience, and may have better insight and forethought to the material presented? It is recommended that research be conducted as to when the optimal time is for officers to attend a leadership training course.

When refresher training is given, it can be given knowing that officers utilize the leadership competencies. This study showed that officers place a high value on the leadership

competencies at the work place. However, information which is not available, is how often do officers use the leadership competencies? If the leadership competencies are used directly after the school yet then abandoned, is this abandonment due to ineffectiveness or lack of retaining leadership information? Also, how much refresher leadership training should be given? Is there an optimal amount of time which will effectively present the leadership material, in order that officers can complete the training and retain the leadership competencies information? It is recommended that research be conducted on the optimal length leadership courses should be in order to most efficient.

The final recommendation is that the computer-based instruction should not be excessively long so as to bore the student, and make the training session a laborious time consuming process in an already busy schedule. Rather the training should be segmented, for ease of completion and enjoyable to accomplish.

Appendix A

The 16 Leadership Competencies

1. Sets goals and Performance Standards. Outstanding Navy leaders set goals to improve tasks performance and use them to asses the ongoing performance of a task, as well as the task's results.

2. Takes Initiative. When a problem is encountered, outstanding Navy leaders take initiative in defining it, accept the responsibility of acting on it, and move immediately to solve it.

3. Plans and Organizes. Outstanding Navy leaders plan and organize tasks, people and resources in their order of importance and schedule the tasks for achievement of their goal.

4. Optimizes Use of Resources. Outstanding Navy leaders match individuals' capabilities with job requirements to maximize tasks accomplishment.

5. Delegates. Outstanding Navy leaders use the chain of command to assign tasks by methods other than a direct order, to get subordinates to accept task responsibility.

6. Monitors Results. Outstanding Navy leaders systematically check progress on tasks accomplishment.

7. Rewards. Outstanding Navy leaders recognize and reward for effective performance on a specific task.

8. Disciplines. In holding subordinates accountable for work goals and Navy standards, outstanding Navy leaders appropriately discipline subordinates, in order to increase the likelihood of the subordinates' improved performance.

9. Self-control. Outstanding Navy leaders hold back an impulse and instead weigh the facts, keep a balanced perspective, and act appropriately.

10. Influences. Outstanding Navy leaders persuade people skillfully -- up, across and down the chain of command -- to accomplish tasks and maintain the organization.

11. Team Builds. Outstanding Navy leaders promote team-work within their work group and with other work groups.

12. Develops Subordinates. Outstanding Navy leaders spend time working with their subordinates, coaching them toward improved performance and helping them to be skillful and responsible in getting the job done at a high standard.

13. Positive Expectations. Outstanding Navy leaders trust in people's basic worth and ability to perform. They approach subordinates with a desire for the subordinates' development.

14. Realistic Expectations. Although outstanding Navy leaders believe that most subordinates want to and can do a good job, they take care not to set a subordinate up for failure by expecting too much. Concern about a subordinate's shortcomings is expressed honestly.

15. Understands. Outstanding Navy leaders identify subordinates' problems and help them to understand these problems. Such leaders appropriately aid others in solving their problems.

16. Conceptualizes. Outstanding Navy leaders dig out the relevant facts in a complex situation and organize those facts to gain a clear understanding of the situation before acting.

[Ref. 7:p. 41]

Appendix B

COMMUNITY	DESIGNATORS
GURL	110X
SWO	111X, 116X, 1210
SUB	112X, 117X, 1220
SPEC	113X, 114X, 118X, 119X, 1260
AIR	123X, 124X, 125X, 130X, 131X, 132X
EDO	144X, 146X, 150X, 151X, 152X, 154X
STAFF	1610 - 2100, 250X, 410X, 510X
MED	210X, 220X, 230X, 290X
SUP	31XX
LDO	6XXX
CWO	7XXX

APPENDIX C

PERCENTAGE OF OFFICERS WHO VIEW LEADERSHIP COMPETENCIES AS NOT IMPORTANT (NOT IMP), IMPORTANT (IMPORT), OR VERY IMPORTANT (VERY IMP)

ACROSS DESIGNATOR COMMUNITY

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
GURL	9.34	18.68	71.98
SURF	5.45	14.18	80.36
SUB	2.16	18.71	79.14
SPEC	5.69	11.39	82.92
AIR	6.47	14.39	79.14
EDO	7.33	12.85	79.82
STAFF	7.43	16.48	76.09
MED	3.05	19.17	77.78
SUP	2.79	10.36	86.85
6110	2.90	8.82	88.28
7110	1.73	8.01	90.26

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
GURL	1.56	16.34	82.10
SURF	0.73	10.91	88.36
SUB	0.72	10.79	88.49
SPEC	1.07	12.10	86.83
AIR	0.72	11.94	87.34
EDO	0.26	8.23	91.52
STAFF	0.59	9.27	90.14
MED	1.10	17.83	81.07
SUP	0.00	10.36	89.64
6110	0.31	6.33	93.36
7110	0.74	8.26	91.00

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
GURL	10.51	38.91	50.58
SURF	6.18	32.36	61.45
SUB	2.52	43.17	54.32
SPEC	6.05	36.30	57.65
AIR	6.62	35.68	57.70
EDO	4.63	31.88	63.50
STAFF	3.38	29.73	66.89
MED	6.11	34.43	59.46
SUP	3.98	42.23	53.78
6110	6.02	33.92	60.06
7110	5.92	28.11	65.97

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
GURL	9.73	17.12	73.15
SURF	7.27	14.91	77.82
SUB	3.96	17.99	78.06
SPEC	6.76	10.68	82.56
AIR	7.05	16.55	76.40
EDO	9.25	16.58	74.16
STAFF	9.12	15.97	74.91
MED	2.56	16.12	81.32
SUP	2.39	13.15	84.46
6110	3.11	6.74	90.15
7110	1.97	6.54	91.49

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
GURL	3.50	19.07	77.43
SURF	1.09	15.27	83.64
SUB	2.16	17.99	79.86
SPEC	3.56	7.47	88.97
AIR	2.01	13.96	84.03
EDO	1.16	9.38	89.46
STAFF	3.09	15.89	81.02
MED	1.34	17.83	80.83
SUP	0.40	11.16	88.45
6110	0.41	8.09	91.49
7100	0.62	7.64	91.74

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
GURL	5.06	26.07	68.87
SURF	0.73	21.09	78.18
SUB	3.60	21.58	74.82
SPEC	2.49	18.51	79.00
AIR	2.45	22.73	74.82
EDO	2.31	14.52	83.16
STAFF	2.35	19.43	78.22
MED	5.37	28.08	66.54
SUP	0.80	15.54	83.67
6100	1.45	15.87	82.68
7110	2.47	16.77	80.76

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
GURL	1.17	10.51	88.33
SURF	0.36	8.73	90.91
SUB	0.36	10.79	88.85
SPEC	0.71	8.19	91.10
AIR	0.58	9.06	90.36
EDO	0.13	4.88	94.99
STAFF	0.88	8.17	90.95
MED	0.73	11.97	87.30
SUP	0.00	7.57	92.43
6100	0.00	4.25	95.75
7100	0.37	6.78	92.85

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
GURL	3.11	25.29	71.60
SURF	1.82	13.45	84.73
SUB	2.16	15.83	82.01
SPEC	0.71	12.10	87.19
AIR	1.87	15.83	82.30
EDO	0.77	11.05	88.17
STAFF	1.84	13.98	84.18
MED	1.34	16.00	82.66
SUP	0.00	12.35	87.65
6100	0.21	7.57	92.22
7100	0.74	7.77	91.49

AS A FUNCTION OF ALL OFFICERS

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ALL OFF	4.99	13.71	81.29

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ALL OFF	0.65	10.48	88.87

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ALL OFF	5.35	33.30	61.35

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ALL OFF	5.81	13.43	80.76

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ALL OFF	1.68	12.74	85.58

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ALL OFF	2.64	19.65	77.70

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ALL OFF	0.49	7.82	91.70

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ALL OFF	1.24	12.77	85.99

ACROSS RANK WITHIN DESIGNATOR COMMUNITIES

GENERAL UNRESTRICTED LINE OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	20.00	20.00	60.00
LTJG	14.00	10.00	76.00
LT	6.45	22.58	70.97
LCDR	4.08	16.33	79.59
CDR	27.27	18.18	54.55
CAPT	0.00	33.33	66.67

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	5.00	35.00	60.00
LTJG	0.00	24.00	76.00
LT	1.61	16.13	82.26
LCDR	2.04	6.12	91.84
CDR	0.00	0.00	100.00
CAPT	0.00	0.00	100.00

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	20.00	25.00	55.00
LTJG	14.00	34.00	52.00
LT	9.68	45.97	44.35
LCDR	6.12	34.69	59.18
CDR	9.09	27.27	63.64
CAPT	0.00	33.33	66.67

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	15.00	15.00	70.00
LTJG	14.00	18.00	68.00
LT	7.26	18.55	74.19
LCDR	8.16	10.20	81.63
CDR	18.18	27.27	54.55
CAPT	0.00	33.33	66.67

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	10.00	40.00	50.00
LTJG	6.00	30.00	64.00
LT	2.42	16.94	80.65
LCDR	2.04	6.12	91.84
CDR	0.00	18.18	81.82
CAPT	0.00	0.00	100.00

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	10.00	50.00	40.00
LTJG	8.00	28.00	64.00
LT	4.03	22.58	73.39
LCDR	4.08	18.37	77.55
CDR	0.00	54.55	45.45
CAPT	0.00	0.00	100.00

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	5.00	20.00	75.00
LTJG	0.00	18.00	82.00
LT	0.81	9.68	89.52
LCDR	2.04	2.04	95.92
CDR	0.00	9.09	90.91
CAPT	0.00	0.00	100.00

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	5.00	40.00	55.00
LTJG	8.00	38.00	54.00
LT	1.61	25.00	73.39
LCDR	2.04	10.20	87.76
CDR	0.00	9.09	90.91
CAPT	0.00	33.33	66.67

SURFACE WARFARE OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	19.35	80.65
LTJG	1.89	11.32	86.79
LT	5.06	16.46	78.48
LCDR	8.33	11.11	80.56
CDR	18.42	7.89	73.68
CAPT	0.00	18.42	81.58

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	22.58	77.42
LTJG	0.00	3.77	96.23
LT	1.27	13.92	84.81
LCDR	0.00	11.11	88.89
CDR	2.63	10.53	86.84
CAPT	0.00	5.26	94.74

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	9.68	32.26	58.06
LTJG	3.77	35.85	60.38
LT	6.33	34.18	59.49
LCDR	11.11	33.33	55.56
CDR	5.26	23.68	71.05
CAPT	2.63	31.58	65.79

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	6.45	93.55
LTJG	1.89	11.32	86.79
LT	8.86	13.92	77.22
LCDR	11.11	25.00	63.89
CDR	18.42	21.05	60.53
CAPT	2.63	13.16	84.21

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	3.23	19.35	77.42
LTJG	0.00	7.55	92.45
LT	2.53	15.19	82.28
LCDR	0.00	22.22	77.78
CDR	0.00	23.68	76.32
CAPT	0.00	7.89	92.11

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	6.45	19.35	74.19
LTJG	0.00	20.75	79.25
LT	0.00	22.78	77.22
LCDR	0.00	27.78	72.22
CDR	0.00	18.42	81.58
CAPT	0.00	15.79	84.21

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	19.35	80.65
LTJG	0.00	3.77	96.23
LT	1.27	8.86	89.87
LCDR	0.00	8.33	91.67
CDR	0.00	13.16	86.84
CAPT	0.00	2.63	97.37

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	3.23	12.90	83.87
LTJG	0.00	9.43	90.57
LT	1.27	18.99	79.75
LCDR	0.00	13.89	86.11
CDR	2.63	15.79	81.58
CAPT	5.26	5.26	89.47

SUBMARINE WARFARE OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	23.81	73.81
LT	3.25	24.39	72.36
LCDR	2.08	18.75	79.17
CDR	0.00	0.00	100.00
CAPT	0.00	10.71	89.29

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	19.05	78.57
LT	0.81	16.26	82.93
LCDR	0.00	0.00	100.00
CDR	0.00	2.94	97.06
CAPT	0.00	3.57	96.43

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	66.67	33.33
LTJG	4.76	50.00	45.24
LT	4.07	43.90	52.03
LCDR	0.00	47.92	52.08
CDR	0.00	26.47	73.53
CAPT	0.00	39.29	60.71

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	26.19	71.43
LT	4.07	19.51	76.42
LCDR	8.33	16.67	75.00
CDR	2.94	0.00	97.06
CAPT	0.00	25.00	75.00

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	21.43	76.19
LT	3.25	20.33	76.42
LCDR	2.08	18.75	79.17
CDR	0.00	5.88	94.12
CAPT	0.00	17.86	82.14

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	45.24	52.38
LT	4.07	23.58	72.36
LCDR	4.17	16.67	79.17
CDR	5.88	2.94	91.18
CAPT	0.00	10.71	89.29

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.38	19.05	78.57
LT	0.00	15.45	84.55
LCDR	0.00	4.17	95.83
CDR	0.00	2.94	97.06
CAPT	0.00	0.00	100.00

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	33.33	66.67
LTJG	2.38	19.05	78.57
LT	3.25	21.95	74.80
LCDR	0.00	10.42	89.58
CDR	2.94	2.94	94.12
CAPT	0.00	7.14	92.86

SPECIAL WARFARE OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	28.57	71.43
LTJG	0.00	23.08	76.92
LT	3.08	10.77	86.15
LCDR	10.29	7.35	82.35
CDR	13.16	7.89	78.95
CAPT	0.00	16.67	83.33

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	14.29	85.71
LTJG	0.00	7.69	92.31
LT	2.31	12.31	85.38
LCDR	0.00	13.24	86.76
CDR	0.00	15.79	84.21
CAPT	0.00	0.00	100.00

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	14.29	42.86	42.86
LTJG	0.00	42.31	57.69
LT	7.69	39.23	53.08
LCDR	4.41	30.88	64.71
CDR	5.26	34.21	60.53
CAPT	8.33	25.00	66.67

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	14.29	85.71
LTJG	0.00	15.38	84.62
LT	5.38	10.00	84.62
LCDR	10.29	10.29	79.41
CDR	13.16	7.89	78.95
CAPT	0.00	16.67	83.33

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	14.29	14.29	71.43
LTJG	3.85	7.69	88.46
LT	3.08	8.46	88.46
LCDR	2.94	5.88	91.18
CDR	5.26	5.26	89.47
CAPT	0.00	8.33	91.67

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	0.00	19.23	80.77
LT	2.31	21.54	76.15
LCDR	4.41	11.76	83.82
CDR	0.00	23.68	76.32
CAPT	8.33	16.67	75.00

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	14.29	85.71
LTJG	0.00	11.54	88.46
LT	1.54	6.92	91.54
LCDR	0.00	8.82	91.18
CDR	0.00	10.53	89.47
CAPT	0.00	0.00	100.00

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	14.29	85.71
LTJG	0.00	23.08	76.92
LT	0.77	11.54	87.69
LCDR	1.47	8.82	89.71
CDR	0.00	15.79	84.21
CAPT	0.00	0.00	100.00

AIR WARFARE OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	5.00	18.75	76.25
LT	8.36	16.03	75.61
LCDR	5.67	16.31	78.01
CDR	6.72	10.08	83.19
CAPT	1.52	6.06	92.42

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	1.25	20.00	78.75
LT	0.35	14.98	84.67
LCDR	1.42	9.22	89.36
CDR	0.84	5.88	93.28
CAPT	0.00	6.06	93.94

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	10.00	43.75	46.25
LT	5.92	38.33	55.75
LCDR	11.35	31.91	56.74
CDR	2.52	31.09	66.39
CAPT	3.03	31.82	65.15

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	3.75	25.00	71.25
LT	5.92	16.03	78.05
LCDR	8.51	15.60	75.89
CDR	12.61	15.13	72.27
CAPT	3.03	13.64	83.33

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	1.25	18.75	80.00
LT	3.48	17.77	78.75
LCDR	2.13	12.77	85.11
CDR	0.00	9.24	90.76
CAPT	0.00	3.03	96.97

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	3.75	37.50	58.75
LT	3.48	25.78	70.73
LCDR	2.13	23.40	74.47
CDR	0.84	12.61	86.55
CAPT	0.00	9.09	90.91

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	1.25	11.25	87.50
LT	0.70	12.89	86.41
LCDR	0.71	5.67	93.62
CDR	0.00	4.20	95.80
CAPT	0.00	6.06	93.94

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	2.50	25.00	72.50
LT	2.09	18.12	79.79
LCDR	2.13	12.77	85.11
CDR	1.68	10.92	87.39
CAPT	0.00	10.61	89.39

ENGINEERING DUTY OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	9.09	81.82
LTJG	4.35	13.04	82.61
LT	10.66	11.68	77.66
LCDR	7.55	14.34	78.11
CDR	6.74	10.88	82.38
CAPT	1.12	15.73	83.15

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	9.09	90.91
LTJG	0.00	13.04	86.96
LT	0.00	7.61	92.39
LCDR	0.38	10.94	88.68
CDR	0.52	6.22	93.26
CAPT	0.00	4.49	95.51

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	45.45	45.45
LTJG	8.70	47.83	43.48
LT	6.09	31.98	61.93
LCDR	5.28	30.19	64.53
CDR	2.59	31.09	66.32
CAPT	2.25	32.58	65.17

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	0.00	90.91
LTJG	8.70	8.70	82.61
LT	14.72	15.23	70.05
LCDR	9.81	21.39	68.30
CDR	7.25	13.99	78.76
CAPT	0.00	13.48	86.52

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	9.09	81.82
LTJG	0.00	17.39	82.61
LT	2.03	10.66	87.31
LCDR	1.51	9.43	89.06
CDR	0.00	9.33	90.67
CAPT	0.00	4.49	95.51

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	27.27	63.64
LTJG	0.00	17.39	82.61
LT	1.52	15.74	82.74
LCDR	2.64	20.00	77.36
CDR	2.59	7.25	90.16
CAPT	2.25	8.99	88.78

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	9.09	90.91
LTJG	0.00	4.35	95.65
LT	0.00	4.57	95.43
LCDR	0.38	6.04	93.58
CDR	0.00	4.15	95.85
CAPT	0.00	3.37	96.63

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	9.09	9.09	81.82
LTJG	0.00	13.04	86.96
LT	0.51	12.18	87.31
LCDR	1.13	11.70	87.17
CDR	0.52	12.35	86.53
CAPT	0.00	2.25	97.75

STAFF CORPS OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	4.76	23.81	71.43
LTJG	10.20	20.41	69.39
LT	9.18	20.65	70.17
LCDR	7.92	15.54	76.54
CDR	4.68	9.79	85.53
CAPT	2.50	8.33	89.17

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	26.19	73.81
LTJG	2.04	10.20	87.76
LT	0.57	9.18	90.25
LCDR	0.59	8.50	90.91
CDR	0.00	8.09	91.91
CAPT	0.83	7.50	91.67

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	2.38	52.38	45.24
LTJG	7.14	35.71	57.14
LT	3.44	31.93	64.63
LCDR	3.52	26.10	70.38
CDR	0.85	26.81	72.34
CAPT	5.00	23.33	71.67

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	16.67	26.19	57.14
LTJG	11.22	20.41	68.37
LT	10.71	20.46	68.83
LCDR	10.56	13.20	76.25
CDR	4.68	9.79	85.53
CAPT	2.50	9.17	88.33

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	2.38	28.57	69.05
LTJG	7.14	17.35	75.51
LT	4.59	19.50	75.91
LCDR	1.47	14.37	84.16
CDR	0.85	11.49	87.66
CAPT	2.50	7.50	90.00

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	30.95	69.05
LTJG	12.24	29.59	58.16
LT	2.68	20.65	76.67
LCDR	1.47	18.48	80.06
CDR	0.00	16.17	83.83
CAPT	0.83	10.83	88.33

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	14.29	85.71
LTJG	1.02	11.22	87.76
LT	1.15	8.41	90.44
LCDR	1.17	7.33	91.50
CDR	0.00	8.09	91.91
CAPT	0.83	5.00	94.17

TAKES RESPONSIBILITIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	11.90	88.10
LTJG	4.08	17.35	78.57
LT	1.91	16.44	81.64
LCDR	2.93	14.66	82.40
CDR	0.43	10.21	89.36
CAPT	0.00	6.67	93.33

MEDICAL CORPS OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	15.79	84.21
LTJG	0.00	11.54	88.46
LT	3.16	22.41	74.43
LCDR	4.25	17.45	78.30
CDR	1.90	16.19	81.90
CAPT	3.61	19.28	77.11

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	10.53	89.47
LTJG	0.00	13.46	86.54
LT	1.15	23.28	75.57
LCDR	0.94	12.26	86.79
CDR	0.00	16.19	83.81
CAPT	3.61	15.66	80.72

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	31.58	68.42
LTJG	7.69	32.69	59.62
LT	6.32	35.92	57.76
LCDR	3.30	33.02	63.68
CDR	5.71	39.05	55.24
CAPT	13.25	27.71	59.04

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	5.26	94.74
LTJG	3.85	7.69	88.46
LT	1.44	20.69	77.87
LCDR	3.77	13.68	82.55
CDR	2.86	16.19	80.95
CAPT	3.61	10.84	85.54

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	15.79	84.21
LTJG	0.00	11.54	88.46
LT	1.15	23.28	75.57
LCDR	1.89	16.98	81.13
CDR	0.95	10.48	88.57
CAPT	2.41	10.84	86.75

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	5.26	36.84	57.89
LTJG	9.62	19.23	71.15
LT	5.46	33.33	61.21
LCDR	6.60	23.11	70.28
CDR	0.95	31.43	67.62
CAPT	4.82	18.07	77.11

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	15.79	84.21
ITJG	1.92	9.62	88.46
LT	0.29	16.67	83.05
LCDR	0.94	7.55	91.51
CDR	0.00	9.52	90.48
CAPT	2.41	7.23	90.36

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	15.79	84.21
LTJG	1.92	9.62	88.46
LT	0.86	20.98	78.16
LCDR	1.42	11.79	86.79
CDR	1.90	12.38	85.71
CAPT	2.41	14.46	83.13

SUPPLY CORPS OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	13.33	86.67
LTJG	0.00	9.09	90.91
LT	3.53	9.41	87.06
LCDR	3.51	14.04	82.46
CDR	4.88	7.32	87.80
CAPT	0.00	10.00	90.00

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	13.33	86.67
LTJG	0.00	6.06	93.94
LT	0.00	9.41	90.59
LCDR	0.00	15.79	84.21
CDR	0.00	7.32	92.68
CAPT	0.00	10.00	90.00

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	6.67	46.67	46.67
LTJG	9.09	45.45	45.45
LT	2.35	45.88	51.76
LCDR	0.00	42.11	57.89
CDR	4.88	34.15	60.98
CAPT	10.00	35.00	55.00

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	13.33	86.67
LTJG	0.00	12.12	87.88
LT	2.35	12.94	84.71
LCDR	3.51	14.04	82.46
CDR	4.88	12.20	82.93
CAPT	0.00	15.00	85.00

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	0.00	100.00
LTJG	0.00	9.09	90.91
LT	0.00	14.12	85.88
LCDR	0.00	19.30	80.70
CDR	2.44	2.44	95.12
CAPT	0.00	5.00	95.00

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	33.33	66.67
LTJG	3.03	18.18	78.79
LT	1.18	10.59	88.24
LCDR	0.00	19.30	80.70
CDR	0.00	12.20	87.80
CAPT	0.00	15.00	85.00

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	6.67	93.33
LTJG	0.00	0.00	100.00
LT	0.00	7.06	92.94
LCDR	0.00	14.04	85.96
CDR	0.00	7.32	92.68
CAPT	0.00	5.00	95.00

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	6.67	93.33
LTJG	0.00	9.09	90.91
LT	0.00	9.41	90.59
LCDR	0.00	21.05	78.95
CDR	0.00	12.20	87.80
CAPT	0.00	10.00	90.00

LIMITED DUTY OFFICER

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	7.34	92.66
LTJG	2.67	11.33	86.00
LT	3.73	7.93	88.34
LCDR	1.80	10.36	87.84
CDR	6.52	6.52	86.96
CAPT	12.50	0.00	87.50

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	4.59	95.41
LTJG	0.00	9.33	90.67
LT	0.47	5.83	93.71
LCDR	0.45	5.86	93.69
CDR	0.00	6.52	93.48
CAPT	0.00	12.50	87.50

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
ENS	2.75	26.61	70.64
LTJG	4.67	39.33	56.00
LT	5.83	32.63	61.54
LCDR	8.11	36.49	55.41
CDR	10.87	23.91	65.22
CAPT	0.00	87.50	12.50

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
ENS	0.92	4.59	94.50
LTJG	3.33	8.67	88.00
LT	3.50	5.83	90.68
LCDR	2.25	9.01	88.74
CDR	6.52	2.17	91.30
CAPT	12.50	12.50	75.00

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	4.59	95.41
LTJG	0.67	10.00	89.33
LT	0.23	7.46	92.31
LCDR	0.90	9.91	89.19
CDR	0.00	6.52	93.48
CAPT	0.00	12.50	87.50

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	16.51	83.49
LTJG	0.67	20.00	79.33
LT	1.63	14.45	83.92
LCDR	2.70	16.22	81.08
CDR	0.00	13.04	86.96
CAPT	0.00	12.50	87.50

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	5.50	94.50
LTJG	0.00	5.33	94.67
LT	0.00	4.43	95.57
LCDR	0.00	3.15	96.85
CDR	0.00	2.17	97.83
CAPT	0.00	0.00	100.00

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
ENS	0.00	5.50	94.50
LTJG	0.67	6.67	92.67
LT	0.00	7.93	92.07
LCDR	0.00	7.66	92.34
CDR	2.17	10.87	86.96
CAPT	0.00	12.50	87.50

CHIEF WARRANT OFFICERS

POSITIVE AND REALISTIC EXPECTATIONS

	NOT IMP	IMPORT	VERY IMP
CWO2	1.54	8.31	90.15
CWO3	2.73	3.64	93.64
CWO4	1.13	11.28	87.59

TAKES INITIATIVE

	NOT IMP	IMPORT	VERY IMP
CWO2	1.23	7.69	91.08
CWO3	0.45	6.36	93.18
CWO4	0.38	10.53	89.10

CONCEPTUALIZES

	NOT IMP	IMPORT	VERY IMP
CWO2	5.23	30.15	64.62
CWO3	5.91	27.27	66.82
CWO4	6.77	26.32	66.92

DEVELOPS SUBORDINATES

	NOT IMP	IMPORT	VERY IMP
CWO2	1.85	5.54	92.62
CWO3	2.73	4.55	92.73
CWO4	1.50	9.40	89.10

TEAM BUILDS

	NOT IMP	IMPORT	VERY IMP
CWO2	0.62	7.69	91.69
CWO3	0.45	5.45	94.09
CWO4	0.75	9.40	89.85

USES MULTIPLE INFLUENCE STRATEGIES

	NOT IMP	IMPORT	VERY IMP
CWO2	1.23	17.54	81.23
CWO3	1.82	14.09	84.09
CWO4	4.51	18.05	77.44

PERSISTENCE

	NOT IMP	IMPORT	VERY IMP
CWO2	0.31	7.08	92.62
CWO3	0.00	4.09	95.91
CWO4	0.75	8.65	90.60

TAKES RESPONSIBILITY

	NOT IMP	IMPORT	VERY IMP
CWO2	0.31	9.85	89.85
CWO3	0.00	5.91	94.09
CWO4	1.88	6.77	91.35

APPENDIX D

MEAN PERCENT OF TIME SPENT IN MANAGEMENT (MGMT), TECHNICAL (TECH), AND LEADERSHIP (LEAD) ACTIVITIES; BY GRADE AND COMMUNITY

ALL OFFICERS

VARIABLE	N	MEAN
MGMT	6768	42.31
TECH	6768	28.78
LEAD	6768	28.90

ALL ENSIGNS

VARIABLE	N	MEAN
MGMT	259	45.34
TECH	259	23.72
LEAD	259	30.93

ALL LIEUTENANTS JUNIOR GRADE

VARIABLE	N	MEAN
MGMT	607	41.62
TECH	607	28.49
LEAD	607	29.88

ALL LIEUTENANTS

VARIABLE	N	MEAN
MGMT	2325	40.40
TECH	2325	31.76
LEAD	2325	27.82

ALL LIEUTENANT COMMANDERS

VARIABLE	N	MEAN
MGMT	1439	44.00
TECH	1439	29.05
LEAD	1439	26.93

ALL COMMANDERS

VARIABLE	N	MEAN
MGMT	860	44.81
TECH	860	26.10
LEAD	860	29.07

ALL CAPTAINS

VARIABLE	N	MEAN
MGMT	467	43.99
TECH	467	21.14
LEAD	467	34.85

ALL GENERAL UNRESTRICTED LINE OFFICERS (GURL)

VARIABLE	N	MEAN
MGMT	257	44.40
TECH	257	23.96
LEAD	257	31.62

ENSIGN3, GURL

VARIABLE	N	MEAN
MGMT	20	34.85
TECH	20	33.30
LEAD	20	31.85

LIEUTENANTS JUNIOR GRADE, GURL

VARIABLE	N	MEAN
MGMT	50	36.64
TECH	50	32.34
LEAD	50	31.02

LIEUTENANTS, GURL

VARIABLE	N	MEAN
MGMT	124	45.27
TECH	124	23.80
LEAD	124	30.91

LIEUTENANT COMMANDERS, GURL

VARIABLE	N	MEAN
MGMT	49	51.55
TECH	49	14.53
LEAD	49	33.91

COMMANDERS, GURL

VARIABLE	N	MEAN
MGMT	11	50.72
TECH	11	17.09
LEAD	11	32.18

CAPTAINS, GURL

VARIABLE	N	MEAN
MGMT	3	61.66
TECH	3	8.33
LEAD	3	30.00

ALL SURFACE WARFARE OFFICERS (SWO)

VARIABLE	N	MEAN
MGMT	275	49.27
TECH	275	16.34
LEAD	275	34.37

ENSIGNS, SWO

VARIABLE	N	MEAN
MGMT	31	49.48
TECH	31	15.03
LEAD	31	35.48

LIEUTENANTS JUNIOR GRADE, SWO

VARIABLE	N	MEAN
MGMT	53	47.64
TECH	53	15.41
LEAD	53	36.94

LIEUTENANTS, SWO

VARIABLE	N	MEAN
MGMT	79	46.62
TECH	79	16.69
LEAD	79	36.68

LIEUTENANT COMMANDERS, SWO

VARIABLE	N	MEAN
MGMT	36	55.13
TECH	36	19.86
LEAD	36	25.00

COMMANDERS, SWO

VARIABLE	N	MEAN
MGMT	38	48.28
TECH	38	18.02
LEAD	38	33.68

CAPTAINS, SWO

VARIABLE	N	MEAN
MGMT	38	52.31
TECH	38	13.00
LEAD	38	34.68

SUBMARINE WARFARE OFFICERS (SUB)

VARIABLE	N	MEAN
MGMT	278	39.79
TECH	278	28.50
LEAD	278	31.69

ENSIGNS, SUB

VARIABLE	N	MEAN
MGMT	3	31.66
TECH	3	35.00
LEAD	3	33.33

LIEUTENANTS JUNIOR GRADE, SUB

VARIABLE	N	MEAN
MGMT	42	31.52
TECH	42	39.78
LEAD	42	28.69

LIEUTENANTS, SUB

VARIABLE	N	MEAN
MGMT	123	40.34
TECH	123	29.77
LEAD	123	29.87

LIEUTENANT COMMANDERS, SUB

VARIABLE	N	MEAN
MGMT	48	44.54
TECH	48	27.97
LEAD	48	27.47

COMMANDERS, SUB

VARIABLE	N	MEAN
MGMT	34	40.08
TECH	34	19.67
LEAD	34	40.23

CAPTAINS, SUB

VARIABLE	N	MEAN
MGMT	28	42.17
TECH	28	16.96
LEAD	28	40.85

SPECIAL WARFARE OFFICERS (SPEC)

VARIABLE	N	MEAN
MGMT	281	49.24
TECH	281	16.67
LEAD	281	34.07

ENSIGNS, SPEC

VARIABLE	N	MEAN
MGMT	7	54.28
TECH	7	6.00
LEAD	7	39.71

LIEUTENANTS JUNIOR GRADE, SPEC

VARIABLE	N	MEAN
MGMT	26	44.42
TECH	26	18.30
LEAD	26	37.26

LIEUTENANTS, SPEC

VARIABLE	N	MEAN
MGMT	130	49.30
TECH	130	19.79
LEAD	130	30.90

LIEUTENANT COMMANDERS, SPEC

VARIABLE	N	MEAN
MGMT	68	52.35
TECH	68	14.54
LEAD	68	33.10

COMMANDERS, SPEC

VARIABLE	N	MEAN
MGMT	38	45.52
TECH	38	13.07
LEAD	38	41.39

CAPTAINS, SPEC

VARIABLE	N	MEAN
MGMT	12	50.41
TECH	12	9.16
LEAD	12	40.41

AIR WARFARE OFFICERS (AIR)

VARIABLE	N	MEAN
MGMT	695	43.73
TECH	695	27.64
LEAD	695	28.61

ENSIGNS, AIR

VARIABLE	N	MEAN
MGMT	2	45.00
TECH	2	27.50
LEAD	2	27.50

LIEUTENANTS JUNIOR GRADE, AIR

VARIABLE	N	MEAN
MGMT	80	38.26
TECH	80	34.12
LEAD	80	27.61

LIEUTENANTS, AIR

VARIABLE	N	MEAN
MGMT	287	39.80
TECH	287	31.72
LEAD	287	28.46

LIEUTENANT COMMANDERS, AIR

VARIABLE	N	MEAN
MGMT	141	47.02
TECH	141	25.24
LEAD	141	27.73

COMMANDERS, AIR

VARIABLE	N	MEAN
MGMT	119	51.28
TECH	119	21.38
LEAD	119	27.32

CAPTAINS, AIR

VARIABLE	N	MEAN
MGMT	66	46.80
TECH	66	18.51
LEAD	66	34.68

ALL ENGINEERING DUTY OFFICERS (EDO)

VARIABLE	N	MEAN
MGMT	778	48.66
TECH	778	23.22
LEAD	778	28.11

ENSIGNS, EDO

VARIABLE	N	MEAN
MGMT	11	50.90
TECH	11	16.81
LEAD	11	32.27

LIEUTENANTS JUNIOR GRADE, EDO

VARIABLE	N	MEAN
MGMT	23	52.26
TECH	23	14.04
LEAD	23	33.69

LIEUTENANTS, EDO

VARIABLE	N	MEAN
MGMT	197	49.35
TECH	197	22.32
LEAD	197	28.31

LIEUTENANT COMMANDERS, EDO

VARIABLE	N	MEAN
MGMT	265	47.31
TECH	265	27.22
LEAD	265	25.46

COMMANDERS, EDO

VARIABLE	N	MEAN
MGMT	193	49.11
TECH	193	23.26
LEAD	193	27.61

CAPTAINS, EDO

VARIABLE	N	MEAN
MGMT	89	48.95
TECH	89	16.34
LEAD	89	34.69

ALL STAFF CORPS OFFICERS (STAFF)

VARIABLE	N	MEAN
MGMT	1359	39.48
TECH	1359	33.64
LEAD	1359	26.86

ENSIGNS, STAFF

VARIABLE	N	MEAN
MGMT	42	49.19
TECH	42	32.83
LEAD	42	17.97

LIEUTENANTS JUNIOR GRADE, STAFF

VARIABLE	N	MEAN
MGMT	98	41.46
TECH	98	35.19
LEAD	98	23.33

LIEUTENANTS, STAFF

VARIABLE	N	MEAN
MGMT	523	36.04
TECH	523	38.33
LEAD	523	25.61

LIEUTENANT COMMANDERS, STAFF

VARIABLE	N	MEAN
MGMT	341	40.20
TECH	341	34.06
LEAD	341	25.72

COMMANDERS, STAFF

VARIABLE	N	MEAN
MGMT	235	42.91
TECH	235	27.40
LEAD	235	29.68

CAPTAINS, STAFF

VARIABLE	N	MEAN
MGMT	120	40.69
TECH	120	23.27
LEAD	120	36.03

ALL MEDICAL CORPS OFFICERS (MED)

VARIABLE	N	MEAN
MGMT	819	28.35
TECH	819	49.14
LEAD	819	22.50

ENSIGNS, MED

VARIABLE	N	MEAN
MGMT	19	32.26
TECH	19	33.36
LEAD	19	34.35

LIEUTENANTS JUNIOR GRADE, MED

VARIABLE	N	MEAN
MGMT	52	32.38
TECH	52	38.44
LEAD	52	29.17

LIEUTENANTS, MED

VARIABLE	N	MEAN
MGMT	348	25.34
TECH	348	54.25
LEAD	348	20.39

LIEUTENANT COMMANDERS, MED

VARIABLE	N	MEAN
MGMT	212	28.83
TECH	212	48.90
LEAD	212	22.25

COMMANDERS, MED

VARIABLE	N	MEAN
MGMT	105	29.39
TECH	105	51.79
LEAD	105	18.81

CAPTAINS, MED

VARIABLE	N	MEAN
MGMT	83	35.03
TECH	83	35.25
LEAD	83	29.71

ALL SUPPLY CORPS OFFICERS (SUP)

VARIABLE	N	MEAN
MGMT	251	47.22
TECH	251	21.20
LEAD	251	31.57

ENSIGNS, SUP

VARIABLE	N	MEAN
MGMT	15	47.33
TECH	15	24.66
LEAD	15	28.00

LIEUTENANTS JUNIOR GRADE, SUP

VARIABLE	N	MEAN
MGMT	33	45.60
TECH	33	23.18
LEAD	33	31.21

LIEUTENANTS, SUP

VARIABLE	N	MEAN
MGMT	85	45.29
TECH	85	22.58
LEAD	85	32.11

LIEUTENANT COMMANDERS, SUP

VARIABLE	N	MEAN
MGMT	57	51.14
TECH	57	18.68
LEAD	57	30.17

COMMANDERS, SUP

VARIABLE	N	MEAN
MGMT	41	49.34
TECH	41	22.12
LEAD	41	28.53

CAPTAINS, SUP

VARIABLE	N	MEAN
MGMT	20	42.50
TECH	20	14.75
LEAD	20	42.75

ALL LIMITED DUTY OFFICES (LDO)

VARIABLE	N	MEAN
MGMT	964	48.25
TECH	964	20.31
LEAD	964	31.42

ENSIGNS, LDO

VARIABLE	N	MEAN
MGMT	109	45.86
TECH	109	20.56
LEAD	109	33.56

LIEUTENANTS JUNIOR GRADE, LDO

VARIABLE	N	MEAN
MGMT	150	46.08
TECH	150	22.98
LEAD	150	30.93

LIEUTENANTS, LDO

VARIABLE	N	MEAN
MGMT	429	48.04
TECH	429	20.96
LEAD	429	30.98

LIEUTENANT COMMANDERS, LDO

VARIABLE	N	MEAN
MGMT	222	50.50
TECH	222	19.05
LEAD	222	30.43

COMMANDERS, LDO

VARIABLE	N	MEAN
MGMT	46	49.63
TECH	46	12.80
LEAD	46	37.56

CAPTAINS, LDO

VARIABLE	N	MEAN
MGMT	8	62.50
TECH	8	10.00
LEAD	8	27.50

ALL CHIEF WARRANT OFFICERS, (CWO)

VARIABLE	N	MEAN
MGMT	811	40.69
TECH	811	28.80
LEAD	811	30.49

CHIEF WARRANT OFFICERS SECOND (CWO2)

VARIABLE	N	MEAN
MGMT	325	41.20
TECH	325	26.82
LEAD	325	31.97

CHIEF WARRANT OFFICERS THIRD (CWO3)

VARIABLE	N	MEAN
MGMT	220	42.53
TECH	220	27.75
LEAD	220	29.70

CHIEF WARRANT OFFICERS FOURTH (CWO4)

VARIABLE	N	MEAN
MGMT	266	38.55
TECH	266	32.10
LEAD	266	29.33

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